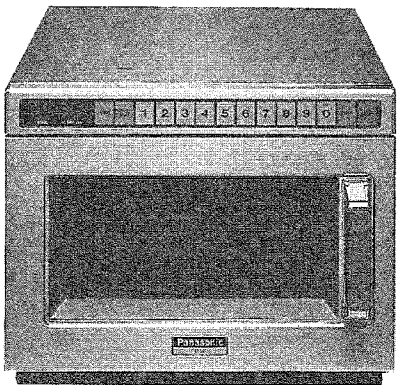
ORDER NO. MMOC9802046C1
E10

Service Manual

Commercial Microwave Oven



MODELS	USA	CANADA
	APH	CPH
NE-1257A	○	—
NE-1257C	—	○
NE-1757A	○	—
NE-1757C	—	○
NE-2157A	○	—
NE-2157C	—	○

NOTE: This Service Manual replaces Service Manual Order No. MMCA9610018C1 and Supplements Order No. MMCA 9703015S1 and Supplements Order No. MMCA9703015S1, MMCA9706017S1 and MMOC9712023S1 for Models NE-1257A/C and NE-1757A/C as well as Service Manual Order No. MMOC9711037C1 for Models NE-2157A/C.

Specifications:

Models:	NE-1257A	NE-1257C	NE-1757A	NE-1757C	NE-2157A/C
Power Source:	120V AC Single Phase 60Hz		208V/230V AC Single Phase 60Hz		
Power Requirements:	2000W, (17.7A)	1950W, (17.2A)	2650W, (14.3A) 208V 2720W, (13.3A) 230V	2600W, (13.8A) 208V 2580W, (12.3A) 230V	3200W, (16.6A) 208V 3200W, (15.3A) 230V
*High frequency Output:					
HIGH	1200W		1700W		2100W
MED	600W		850W		1050W
LOW	340W		340W		340W
Microwave Frequency:	2,450MHz				
Timer:	Maximum programmable time for single stage heating HI and MED power = 15 min. DEF = 30 min.				
Outside Dimensions:	$16^{5}/_{8}$" (W) X 20" (D) X $13^{3}/_{16}$" (H) 422mm (W) X 508mm (D) X 335mm (H)				
Inside Dimensions:	13" (W) X $12^{3}/_{32}$" (D) X $6^{7}/_{8}$" (H) 330mm (W) X 310mm (D) X 175mm (H)				
Weight:	58 lbs/26.3 kg		62 lbs/28.3 kg		65 lbs/29.5 kg
*Output power: IEC705-88 Test procedure					
Specifications subject to change without notice					

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J" (D.H.H.S.): U.S.A. models
   or "Radiation Emitting Devices Act" (Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage".
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PHCC)	Panasonic Home & Commercial Products Company One Panasonic Way, Panazip: 4A-5 Secaucus, New Jersey 07094 Attention: Service Engineering	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (787)750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905) 624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ in the replacement parts list. It is essential that these critical parts should be replaced only with the manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches.
   (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

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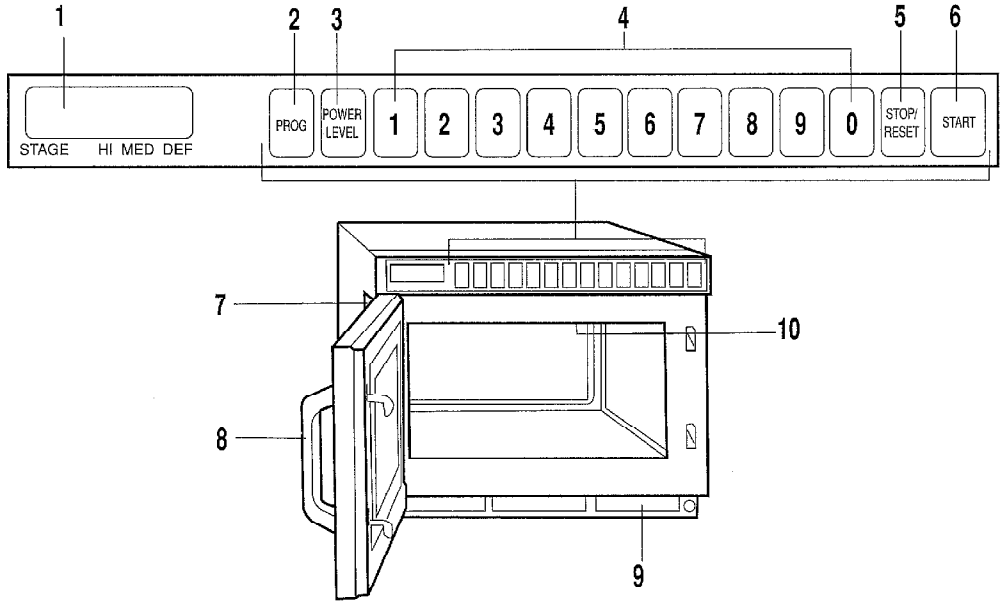
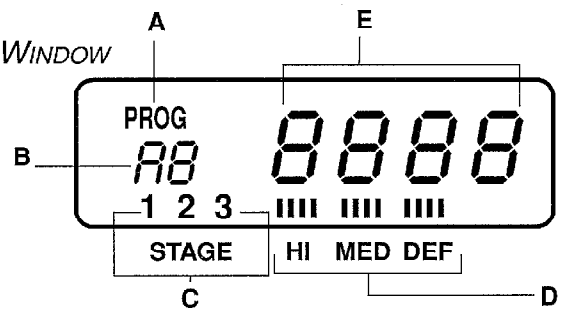
CONTROL PANEL



1 Digital Display Window (see below)
2 Program Pad
3 Power Level Selector Pad
4 Number/Memory Pads
5 Stop/Reset Pad
6 Start Pad
7 Oven Lamp Cover
8 Door Handle
9 Air Filter
10 Splatter Shield (top of inner cavity)

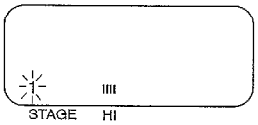
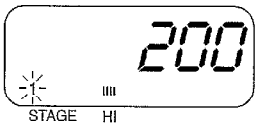
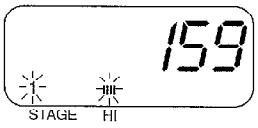
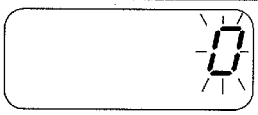
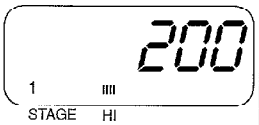
DIGITAL DISPLAY WINDOW



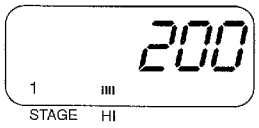
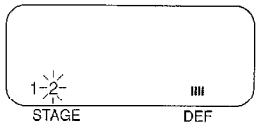
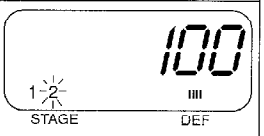
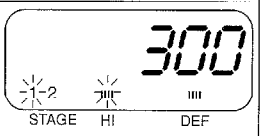
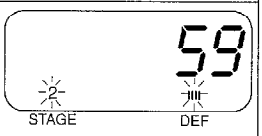
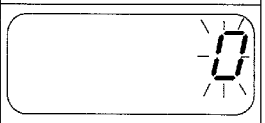
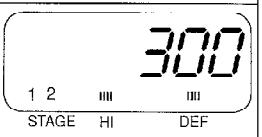
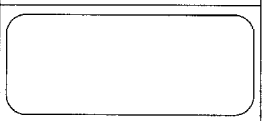
A–Program Display
B–Memory Pad Number Display
C–1st, 2nd and 3rd Stage Heating Indicators
D–Power Level Indicators (3)
E–Heating Time Display (min. sec.)

OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

1. Manual heating for single stage heating

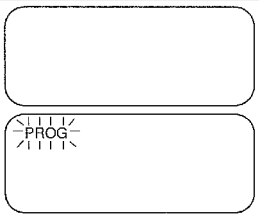
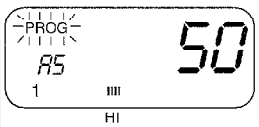
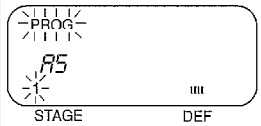
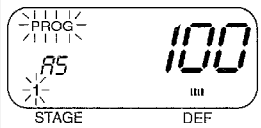
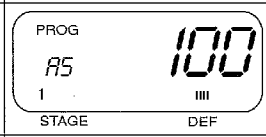
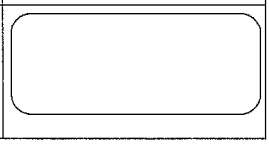
OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Place a water load in the oven and close the door.	
3. Tap [POWER LEVEL] pad once for High power. (Sets to HI power)	
4. Set the desired heating time by tapping number pads [2], [0], [0]. (Sets to 2 minutes)	
5. Tap [START] pad. Heating and power level will blink as time counts down.	
6. When the time is up, you hear 3 beeps. (Factory setting)	
7. Open the door and take out the water load. The display goes back to the originally selected time and power.	
8. Close the door. 1 minute later, display will return blank and the fan will stop.	

2. Manual heating for 2nd stage heating

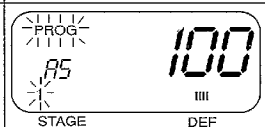
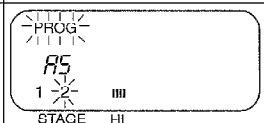
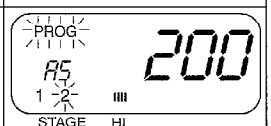
OPERATION	DISPLAY
1. Follow steps 1 to 4 for single stage.	
2. Tap [POWER LEVEL] pad three times for Defrost. (Sets to DEF power)	
3. Set the desired heating time by tapping number pads [1], [0], [0]. (Sets to 1 minute)	
4. Tap [START] pad. (1st stage) heating and power level will blink as time counts down.	
5. When the 1st stage time is up, you hear 1 beep sound. (2nd stage) heating and power level indicators will blink as time continues to count down.	
6. When the time is up, you hear 3 beeps. (Factory setting)	
7. Open the door and take out the water load. The display goes back to the originally selected time and power.	
8. Close the door. 1 minute later, display will return blank and the fan will stop.	

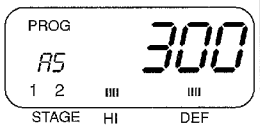
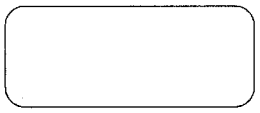
NOTE: For a 3rd stage heating cycle, select a further power level and time between steps 3 and 4 above.

3. Memory setting for single stage heating

OPERATION	DISPLAY
1. Display must be blank before programming can begin. Touch [PROG] pad.	
2. Tap [5] pad for heating time of 50 sec. (Sets to memory pad 5) Previously selected power and time will appear.	
3. Tap [POWER LEVEL] pad three times for Defrost. (Sets to DEF power)	
4. Set the desired heating time by tapping number pads, [1], [0], [0]. (Sets to 1 minute)	
5. Touch [PROG] pad again. Prog stops blinking. Selected memory pad programming for single stage heating is completed.	
6. 3 seconds after programming, the display window will go blank.	

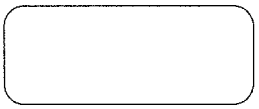
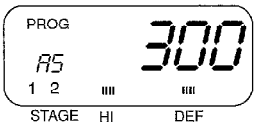
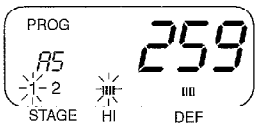
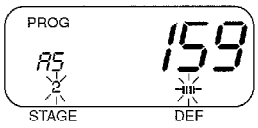
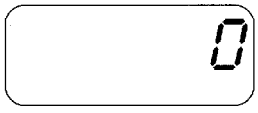
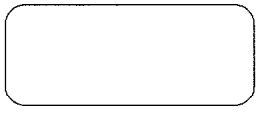
4. Memory setting for 2nd or 3rd stage heating

OPERATION	DISPLAY
1. Follow steps 1 to 4 for memory setting for single stage.	
2. Tap [POWER LEVEL] pad once for High power. (Sets to HI power)	
3. Set the desired heating time by tapping number pads [2], [0], [0]. (Sets to 2 minutes)	

OPERATION	DISPLAY
4. Touch [PROG] pad again. Heating time is displayed by adding single and 2nd stage heating time. Prog stops blinking and stage indicators remain lit. Programming for 2nd stage heating is completed.	
5. 3 seconds after programming, the display window will go blank.	

NOTE: For a 3rd stage heating cycle, select a further power level and dial in a time, between steps 3 and 4.

5. Memory heating for single and second stage

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Place a water load in the oven and close the door.	
3. Tap two desired memory pads. Total heating times for both stages, Stage "1" and "2" and both power levels will be displayed.	
4. Tap [START] pad. 1st stage heating: "1" stage and 1st power level indicators blink as time counts down.	
5. 2nd stage heating: One beep sounds and oven shifts to second stage heating. Count down continues. "2" stage and 2nd power level blink.	
6. When the time is up, you hear 3 beeps. (Factory setting) The time display will blink "0" until the door is opened.	
7. Open the door and take out the water load.	
8. Close the door. Fan will stop and display will return blank after 1 minute.	

NOTE: When program is locked, heating can be started automatically by tapping memory pad.

6. Setting time for Air Filter Replacement

OPERATION	DISPLAY
1. Open the door and leave it open.	0
2. While pressing START pad, close and open the door.	0
3. Quickly press 3 pad. The display will show the length of time originally PRESET. ex: 100 hours	H 100
4. Set the desired heating time by pressing appropriate pads. ex: 1230 hours, press 1, 2, 3, 0 pads	H 1230
5. Press PROG pad.	PROG H 1230
6. After 3 seconds, "0" will appear.	0
7. After the programmed time passes at the end of cooking, "FILT" will appear.	FILT

Note. To check the total number of hours used:
1. Open the door and leave it open.
2. While pressing the START pad, press the 3 pad.
3. The display will show the number of hours used. "PROG" and "H" will appear in the display.

[Example]: If the oven has been used for 20 hours:

After 3 seconds, "0" will appear in the display window.

7. To Read the Cycle Counter

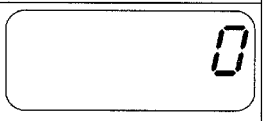
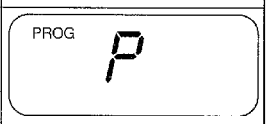
OPERATION	DISPLAY
1. Open the door and leave it open.	0
2. While pressing STOP/RESET pad, press each memory pad. The display shows the number of times each memory pad has been used. Within 3 seconds, press the POWER LEVEL pad to show the number of times the oven has been used in the manual mode. ex. 6666 → 6,666 times.	6666
3. Remove your finger from STOP/RESET pad and quickly close door while the display is still showing a pad's cycle count. Display will now show the total cumulative number of times the oven has been used. ex. 99999 → 99,999 times.	9 9999
4. 3 seconds later, the display will go blank and the fan will stop.	

NOTE: Total cumulative number includes programming memory heating and manual heating number of times it has been used. Cooking times over 99,999 times will go back to 0.

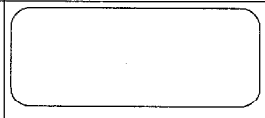
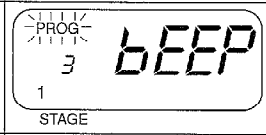
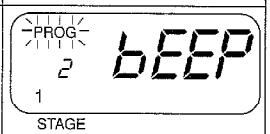
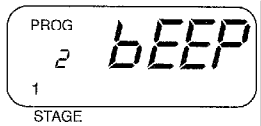
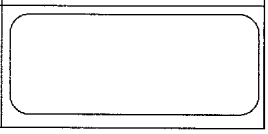
8. To Activate Program Lock

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle. Do not open the door. Display must be blank before Program Lock can be activiated.	
2. Press and hold PROG pad until the display shows "PROG", "P" and "L". (for more than 5 seconds)	PROG
3. Program lock feature is now activated.	PROG P L

9. To Release Program Lock

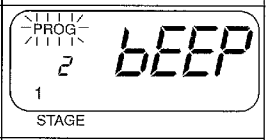
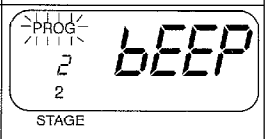
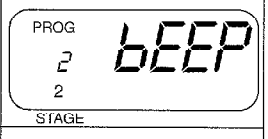
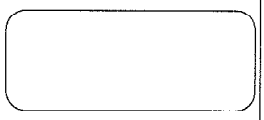
OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Leave it open. While pressing STOP/RESET pad, press and hold PROG pad until the display will show "PROG" and "P". (for more than 5 seconds)	
3. Program lock feature is now deactivated.	

10. To Select Beep Tone Options

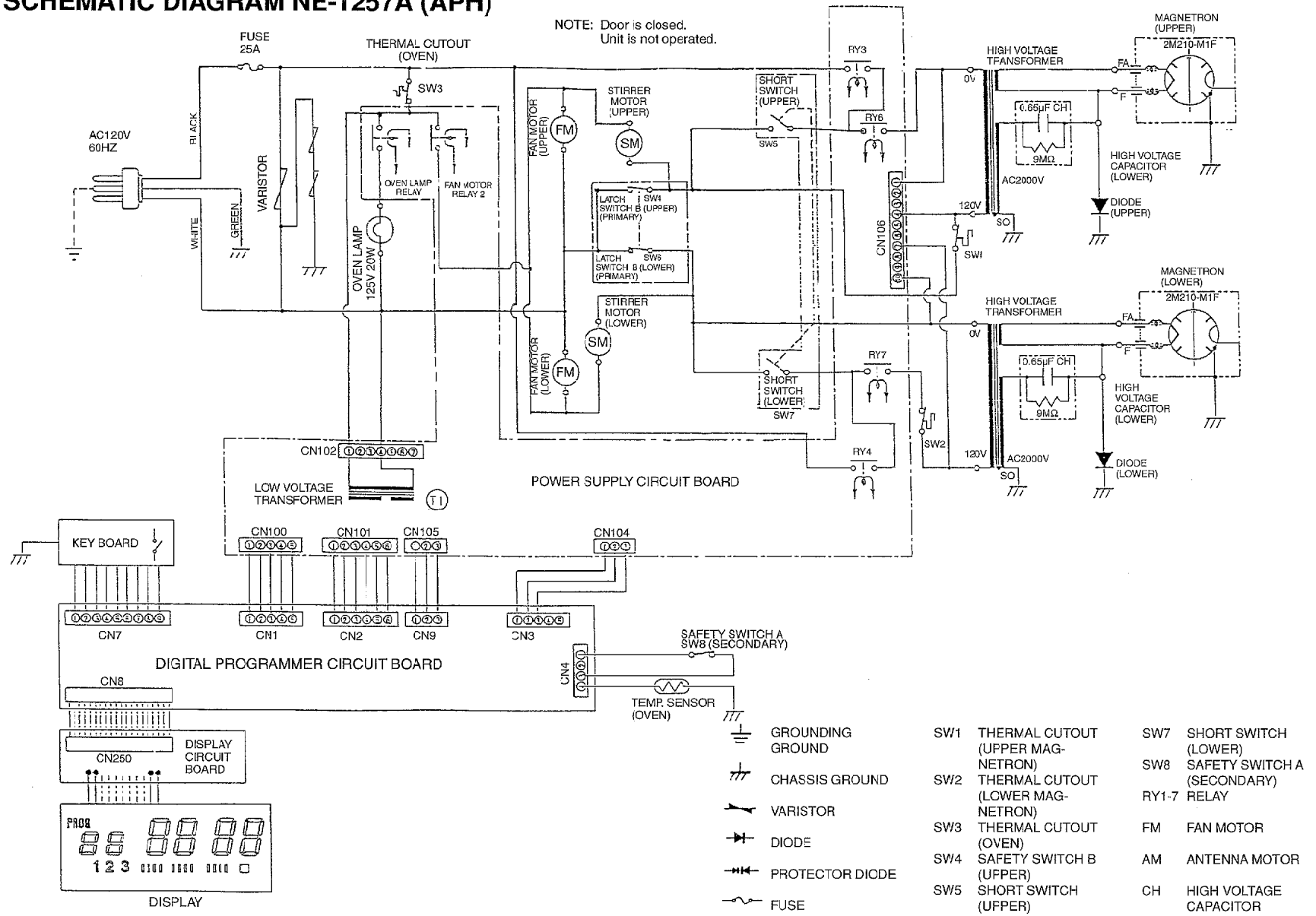
OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door and leave it open.	
3. Press PROG pad and then within 1 minute press 0 pad. Display at right appears.	
4. Select the desired sound loudness level by pressing 0 pad. Repeated pressing of 0 pad will lower the loudness all the way to silent. Display shows loudness level in digits (3 to 0 - loudest to silent).	
5. Press PROG pad again. Prog stops blinking. You have completed selecting your desired loudness level.	
6. Close the door. 1 minute later, display window will go blank and the fan will stop.	

To select length of tone at end of heating cycle there are 2 options.
A. 3 beeps (factory setting).
B. 60 seconds of short beeps.

To set for 60 seconds of short beeps:

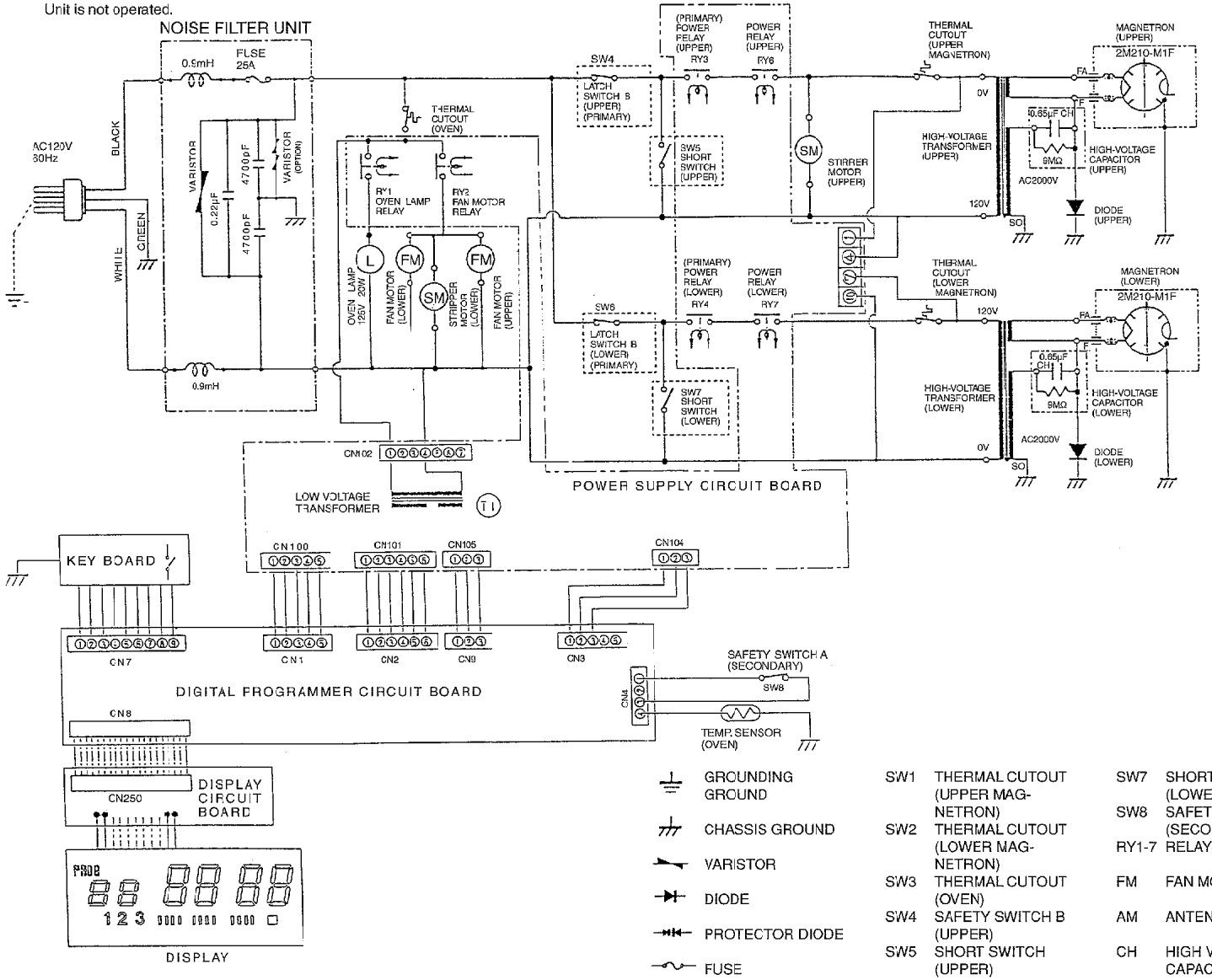
OPERATION	DISPLAY
1. Complete steps 1-4 from the previous column. Do not close the door.	
2. Touch PROG pad and quickly select the desired tone length by touching 0 pad. "1" illuminated = 3 beeps. "2" illuminated = 60 seconds of beeps.	
3. When the desired length of tone has been selected (1 or 2), press PROG pad again. 3 seconds later, the display will show "0".	
4. Close the door. 1 minute later, display window will go blank and the fan will stop.	

SCHEMATIC DIAGRAM NE-1257A (APH)



SCHEMATIC DIAGRAM NE-1257C (CPH)

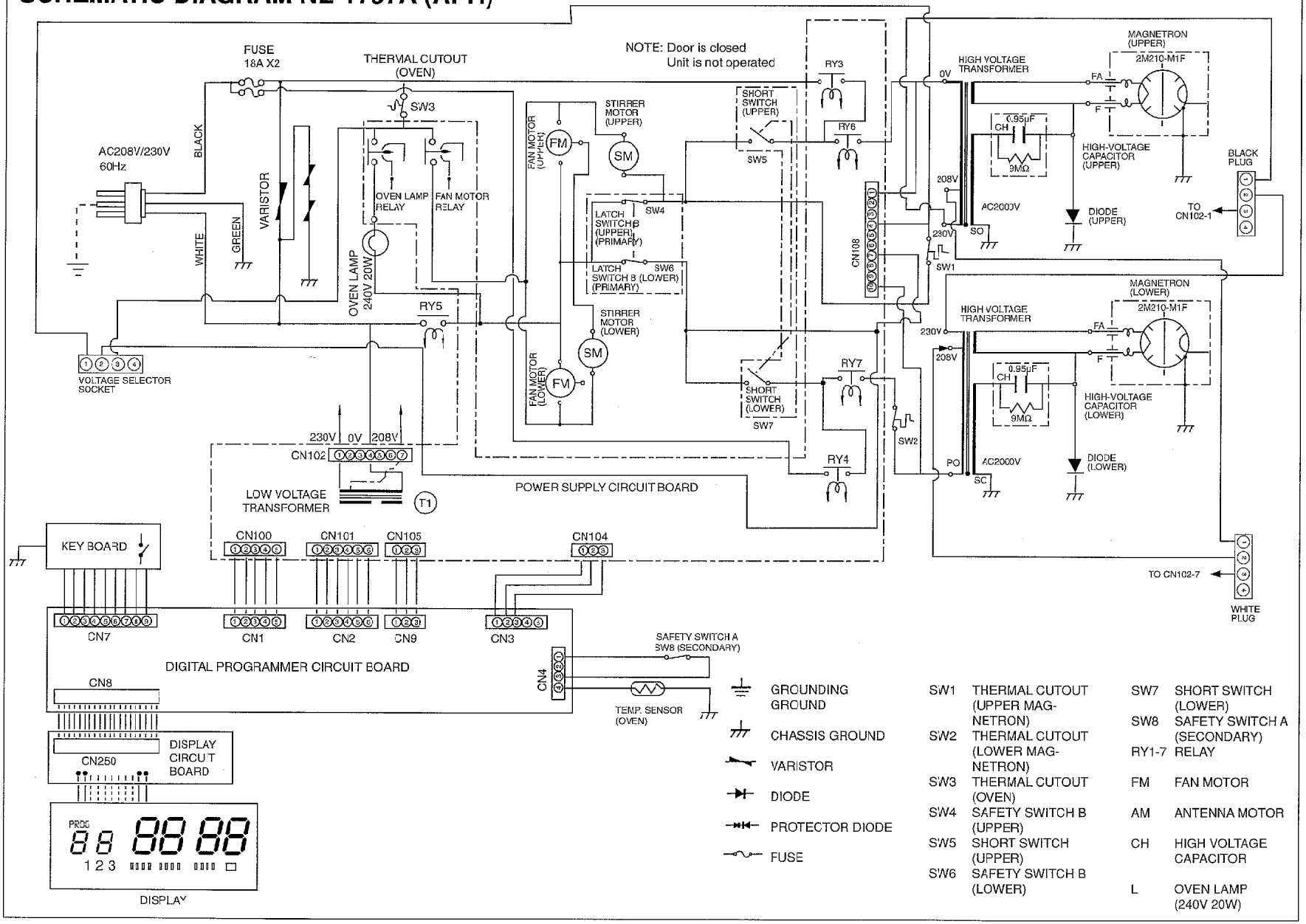
NOTE: Door is closed.
Unit is not operated.



GROUNDING GROUND
CHASSIS GROUND
VARISTOR
DIODE
PROTECTOR DIODE
FUSE

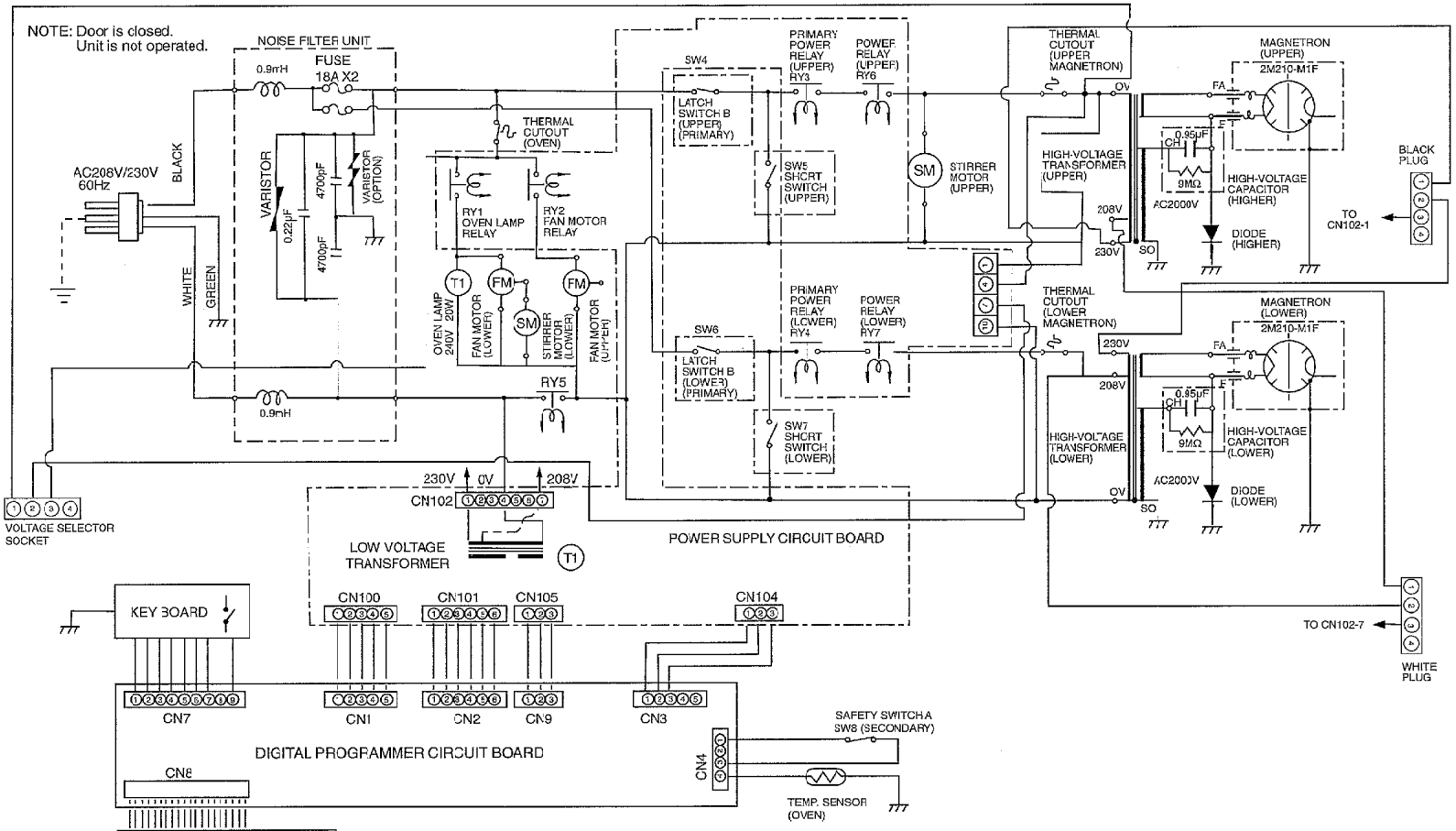
SW1	THERMAL CUTOUT (UPPER MAGNETRON)	SW7	SHORT SWITCH (LOWER)
SW2	THERMAL CUTOUT (LOWER MAGNETRON)	SW8	SAFETY SWITCH A (SECONDARY)
SW3	THERMAL CUTOUT (OVEN)	RY1-7	RELAY
SW4	SAFETY SWITCH B (UPPER)	FM	FAN MOTOR
SW5	SHORT SWITCH (UPPER)	AM	ANTENNA MOTOR
SW6	SAFETY SWITCH B (LOWER)	CH	HIGH VOLTAGE CAPACITOR
		L	OVEN LAMP (125V 20W)

SCHEMATIC DIAGRAM NE-1757A (APH)

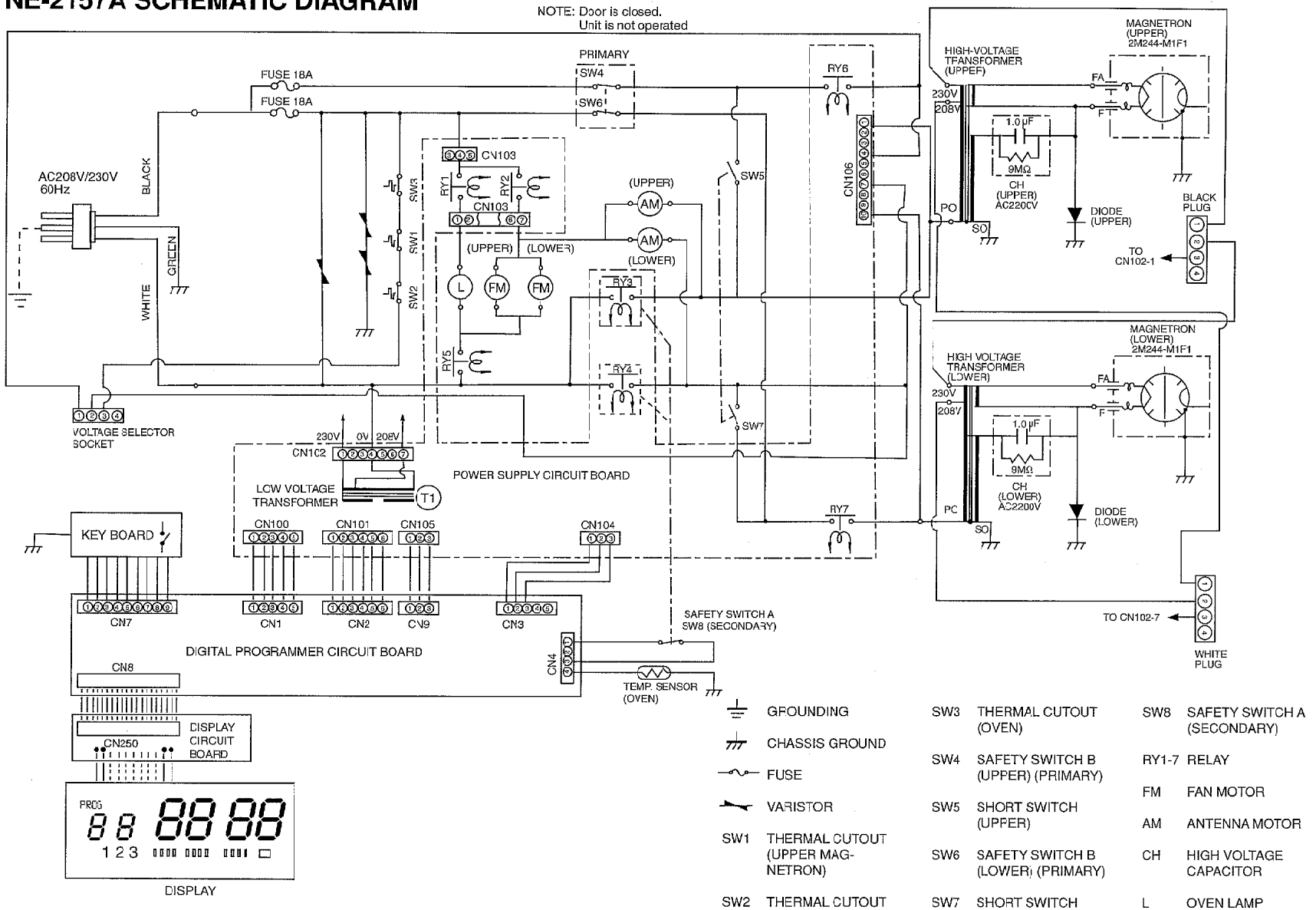


SW1	THERMAL CUTOUT (UPPER MAGNETRON)	SW7	SHORT SWITCH (LOWER)
SW2	THERMAL CUTOUT (LOWER MAGNETRON)	SW8	SAFETY SWITCH A (SECONDARY)
SW3	THERMAL CUTOUT (OVEN)	RY1-7	RELAY
SW4	SAFETY SWITCH B (UPPER)	FM	FAN MOTOR
SW5	SHORT SWITCH (UPPER)	AM	ANTENNA MOTOR
SW6	SAFETY SWITCH B (LOWER)	CH	HIGH VOLTAGE CAPACITOR
		L	OVEN LAMP (240V 20W)

SCHEMATIC DIAGRAM NE-1757C (CPH)

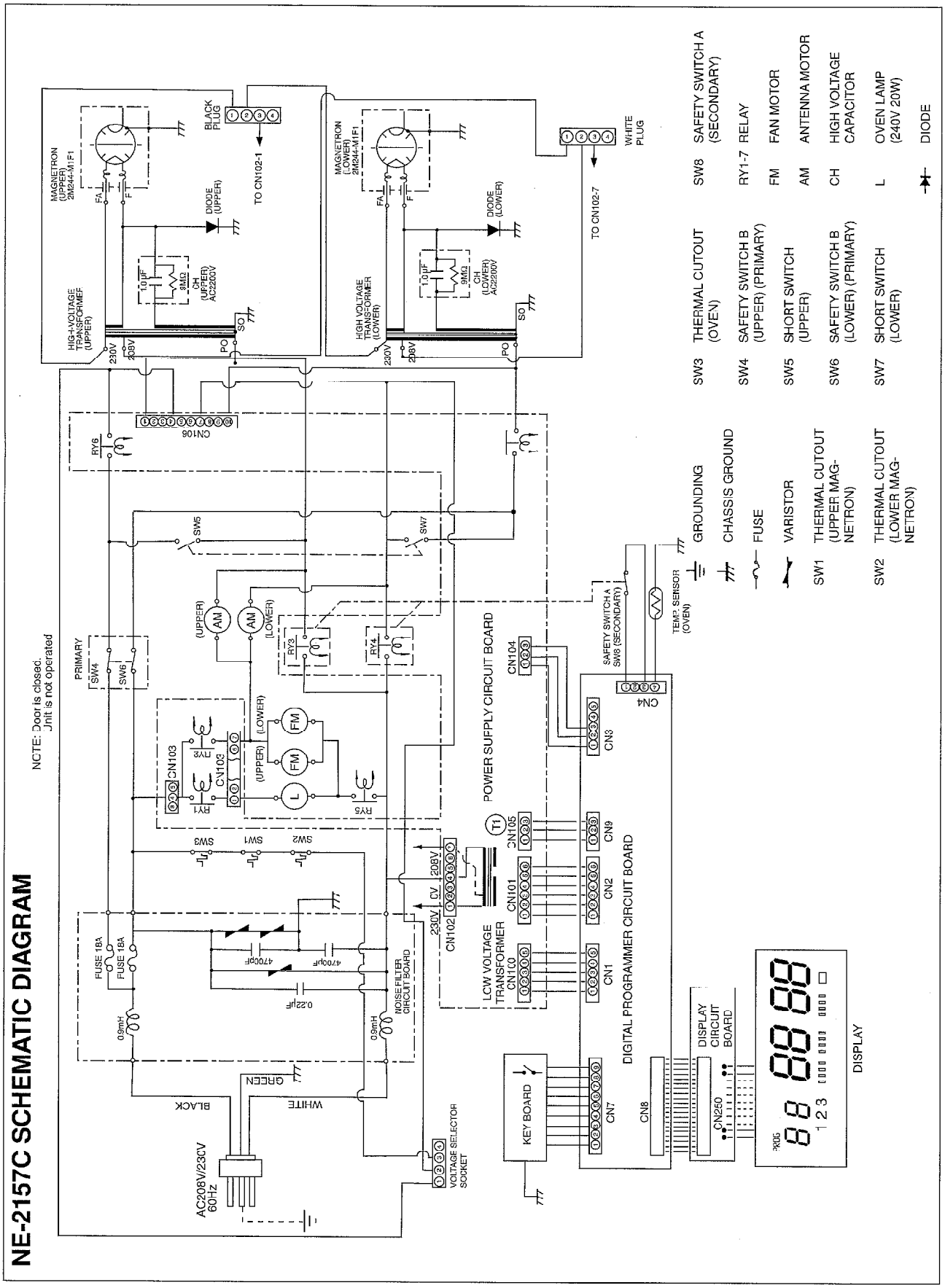


NE-2157A SCHEMATIC DIAGRAM



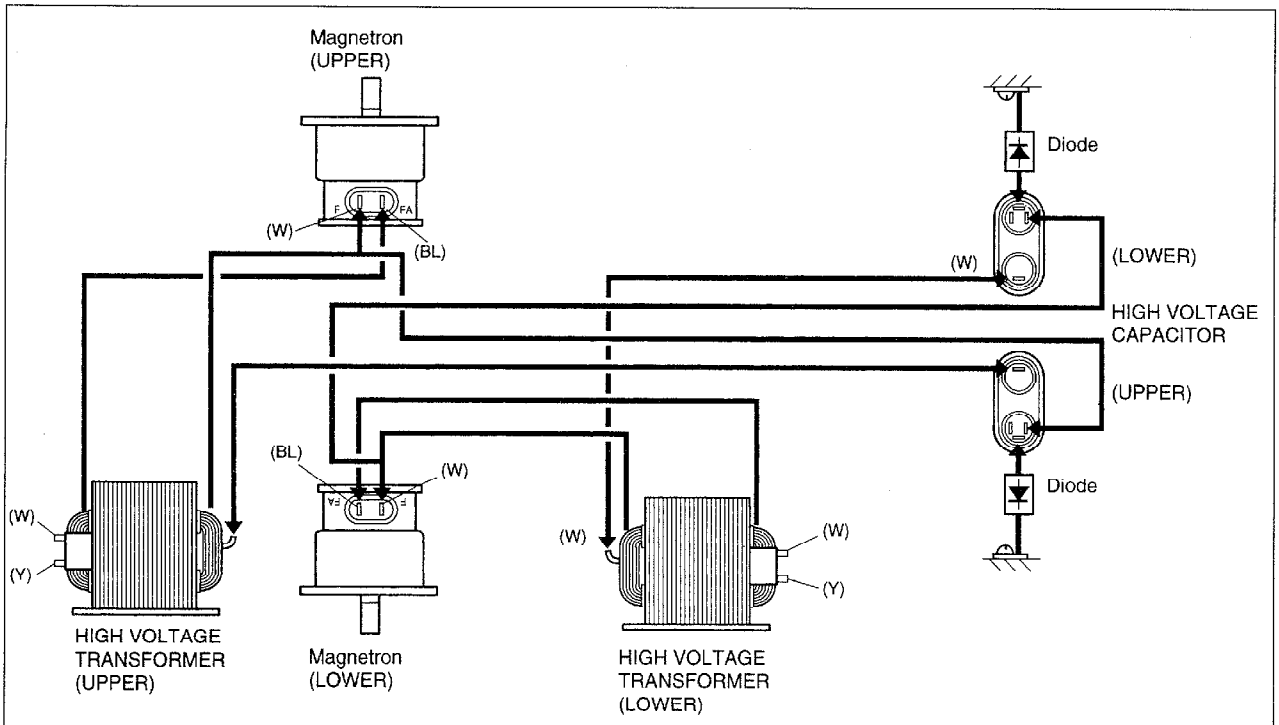
⏚	GROUNDING	SW3	THERMAL CUTOUT (OVEN)	SW8	SAFETY SWITCH A (SECONDARY)
⏚	CHASSIS GROUND	SW4	SAFETY SWITCH B (UPPER) (PRIMARY)	RY1-7	RELAY
~	FUSE	SW5	SHORT SWITCH (UPPER)	FM	FAN MOTOR
	VARISTOR	SW6	SAFETY SWITCH B (LOWER) (PRIMARY)	AM	ANTENNA MOTOR
SW1	THERMAL CUTOUT (UPPER MAGNETRON)	SW7	SHORT SWITCH (LOWER)	CH	HIGH VOLTAGE CAPACITOR
SW2	THERMAL CUTOUT (LOWER MAGNETRON)			L	OVEN LAMP (240V 20W)
					DIODE

NE-2157C SCHEMATIC DIAGRAM



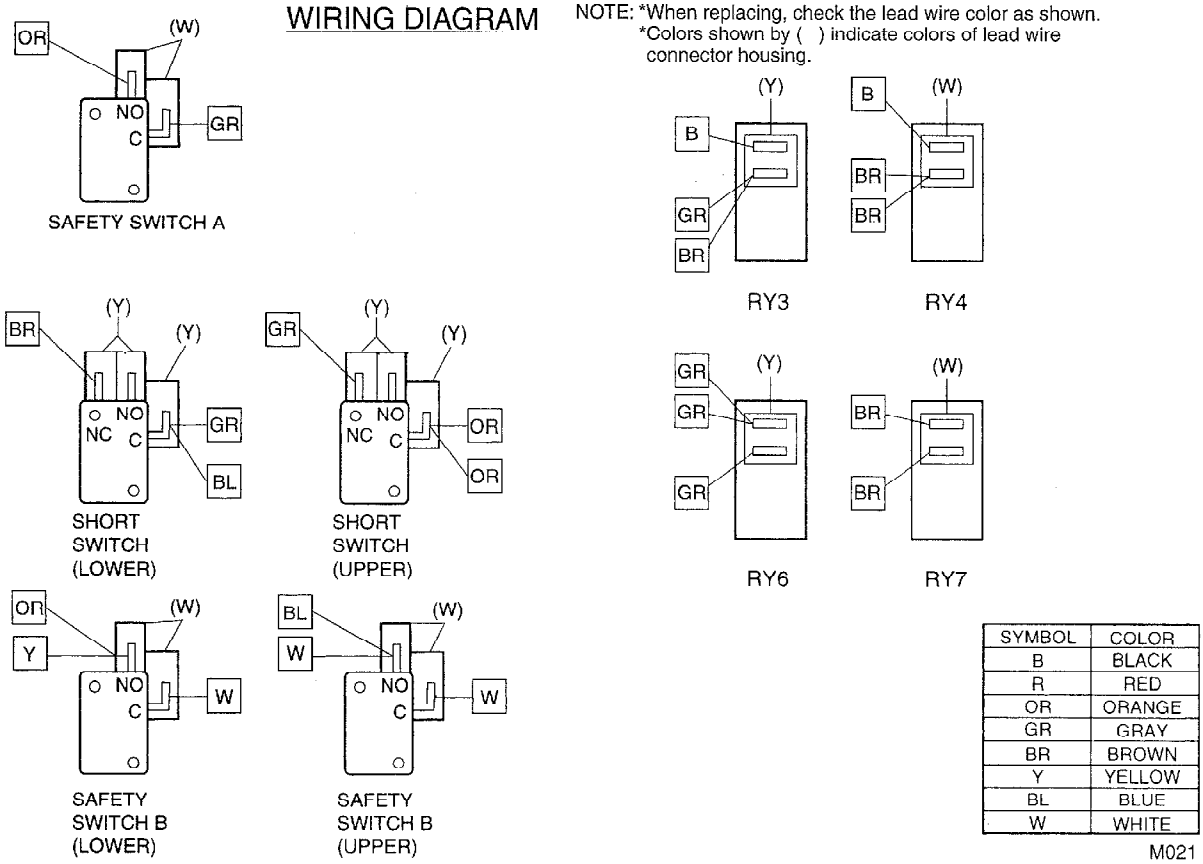
WIRING DIAGRAM (NE-1257A)

NOTE: When replacing, check the lead wire color as shown.



WIRING DIAGRAM

NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.

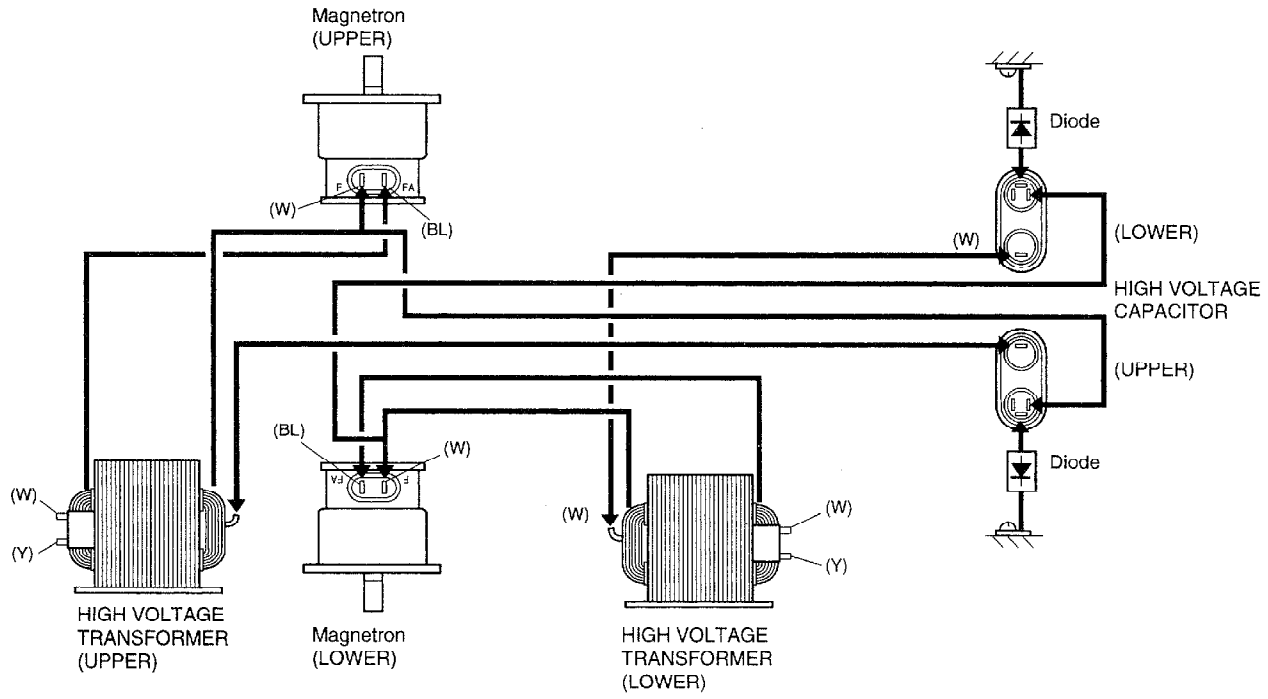


SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GR	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE

M021

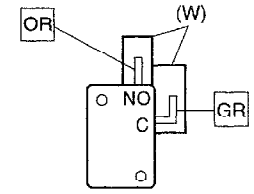
WIRING DIAGRAM (NE-1257C)

NOTE: When replacing, check the lead wire color as shown.

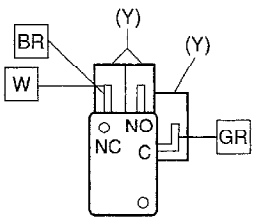


WIRING DIAGRAM

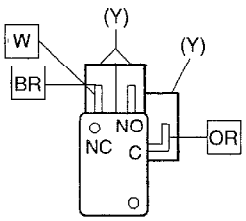
NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.



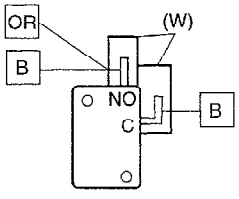
SAFETY SWITCH A



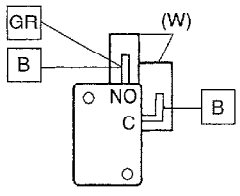
SHORT SWITCH (LOWER)



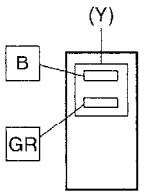
SHORT SWITCH (UPPER)



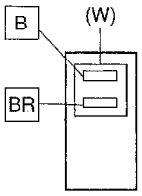
SAFETY SWITCH B (LOWER)



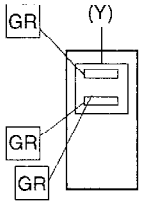
SAFETY SWITCH B (UPPER)



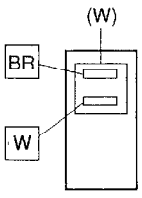
RY3



RY4



RY6



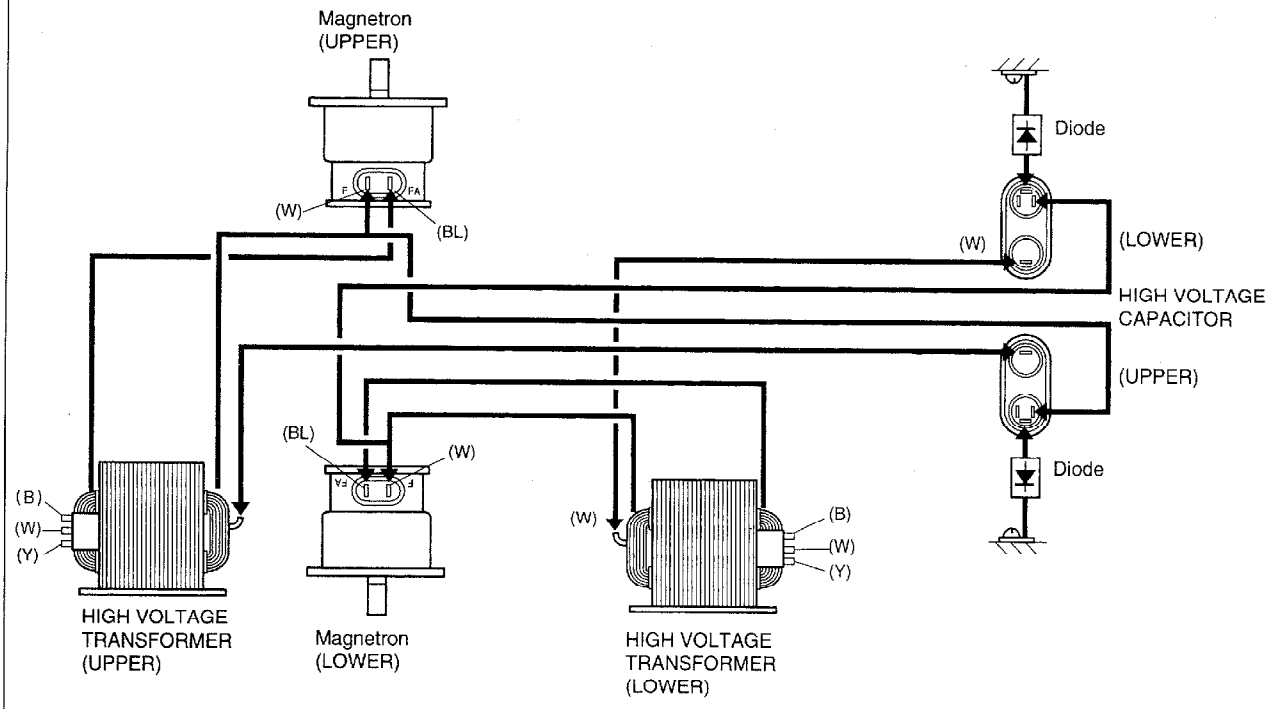
RY7

SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GR	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE

M021

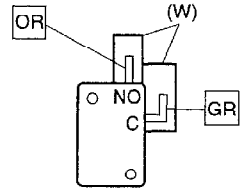
WIRING DIAGRAM (NE-1757A)

NOTE: When replacing, check the lead wire color as shown.

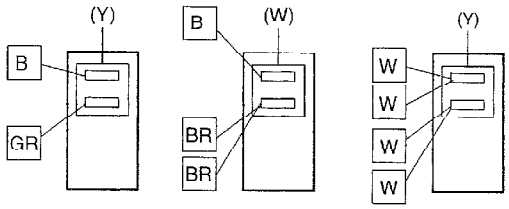


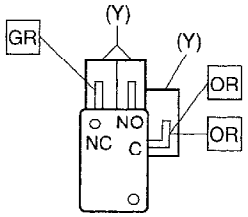
WIRING DIAGRAM

NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.

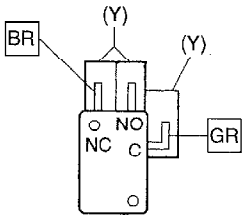


SAFETY SWITCH A

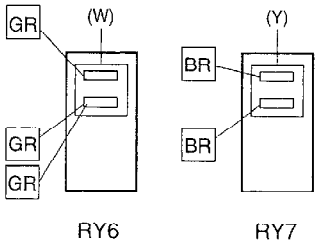


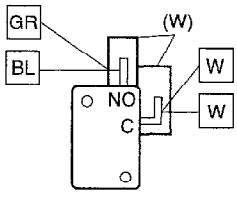


SHORT SWITCH (LOWER)

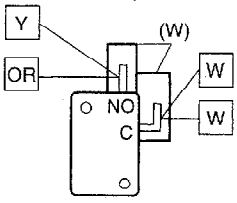


SHORT SWITCH (UPPER)





SAFETY SWITCH B (LOWER)



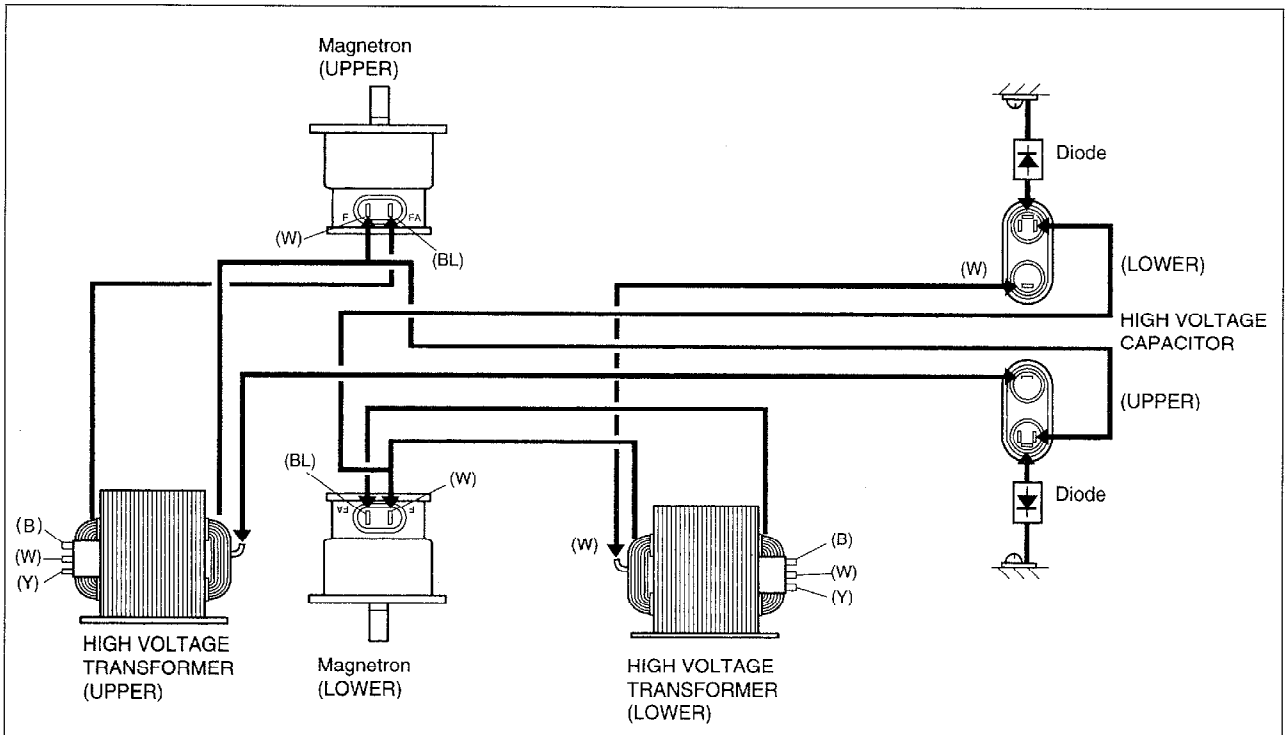
SAFETY SWITCH B (UPPER)

SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GR	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE

M021

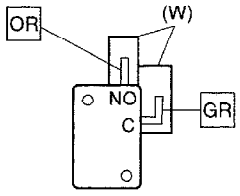
WIRING DIAGRAM (NE-1757C)

NOTE: When replacing, check the lead wire color as shown.

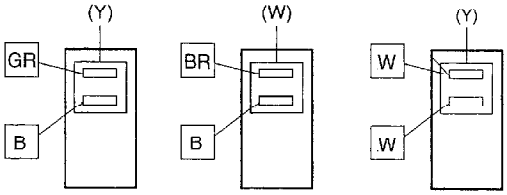


WIRING DIAGRAM

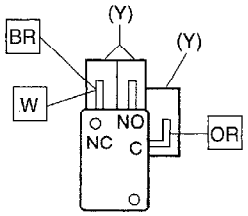
NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.



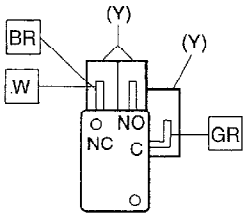
SAFETY SWITCH A



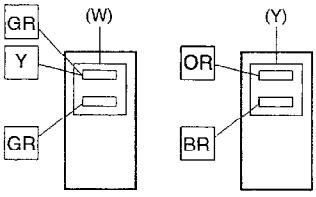
RY3 RY4 RY5



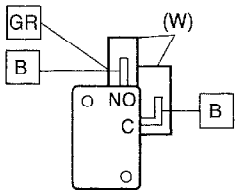
SHORT SWITCH (LOWER)



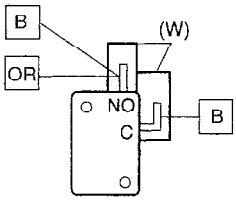
SHORT SWITCH (UPPER)



RY6 RY7



SAFETY SWITCH B (LOWER)



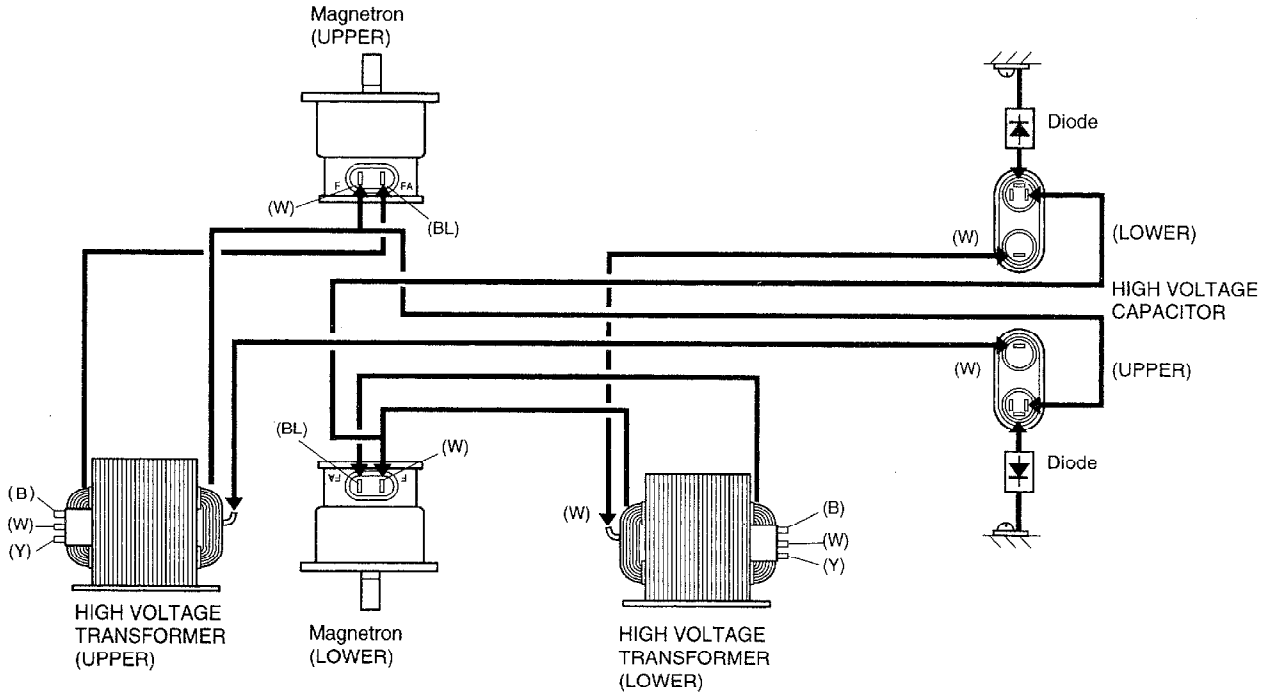
SAFETY SWITCH B (UPPER)

SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GR	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE

M021

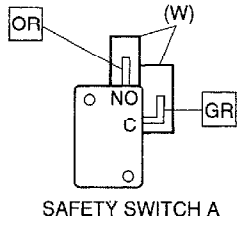
WIRING DIAGRAM (NE-2157A)

NOTE: When replacing, check the lead wire color as shown.

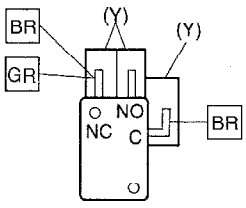


WIRING DIAGRAM

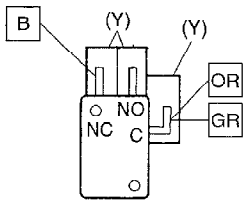
NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.



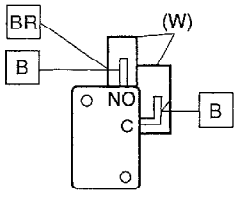
SAFETY SWITCH A



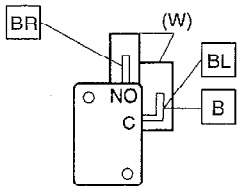
SHORT SWITCH (LOWER)



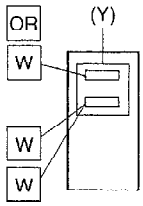
SHORT SWITCH (UPPER)



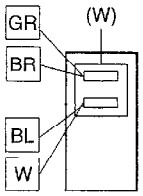
SAFETY SWITCH B (LOWER)



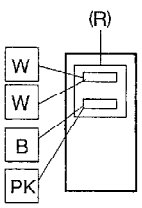
SAFETY SWITCH B (UPPER)



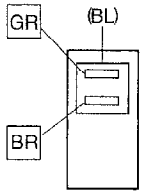
RY3



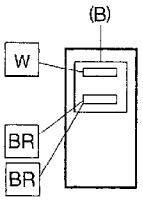
RY4



RY5



RY6

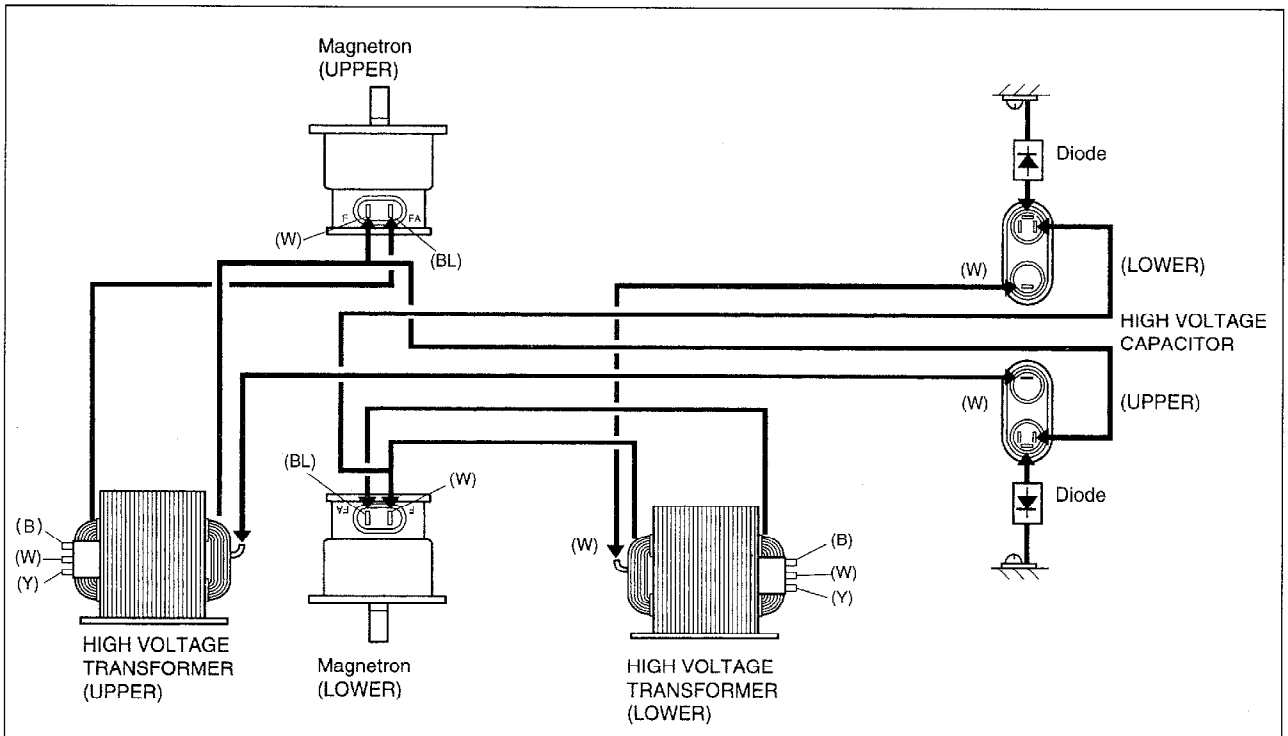


RY7

SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GR	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE
PK	PINK

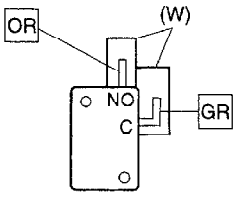
WIRING DIAGRAM (NE-2157C)

NOTE: When replacing, check the lead wire color as shown.

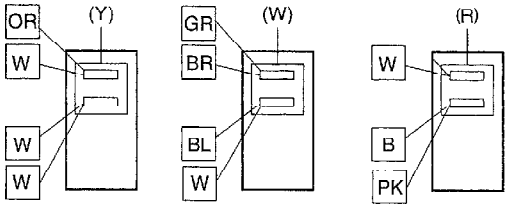


WIRING DIAGRAM

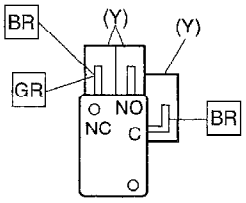
NOTE: *When replacing, check the lead wire color as shown.
*Colors shown by ( ) indicate colors of lead wire connector housing.



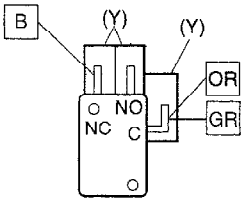
SAFETY SWITCH A



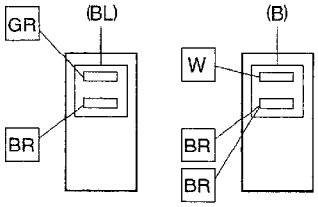
RY3 RY4 RY5



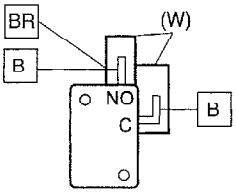
SHORT SWITCH (LOWER)



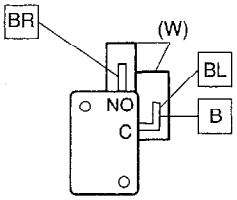
SHORT SWITCH (UPPER)



RY6 RY7



SAFETY SWITCH B (LOWER)



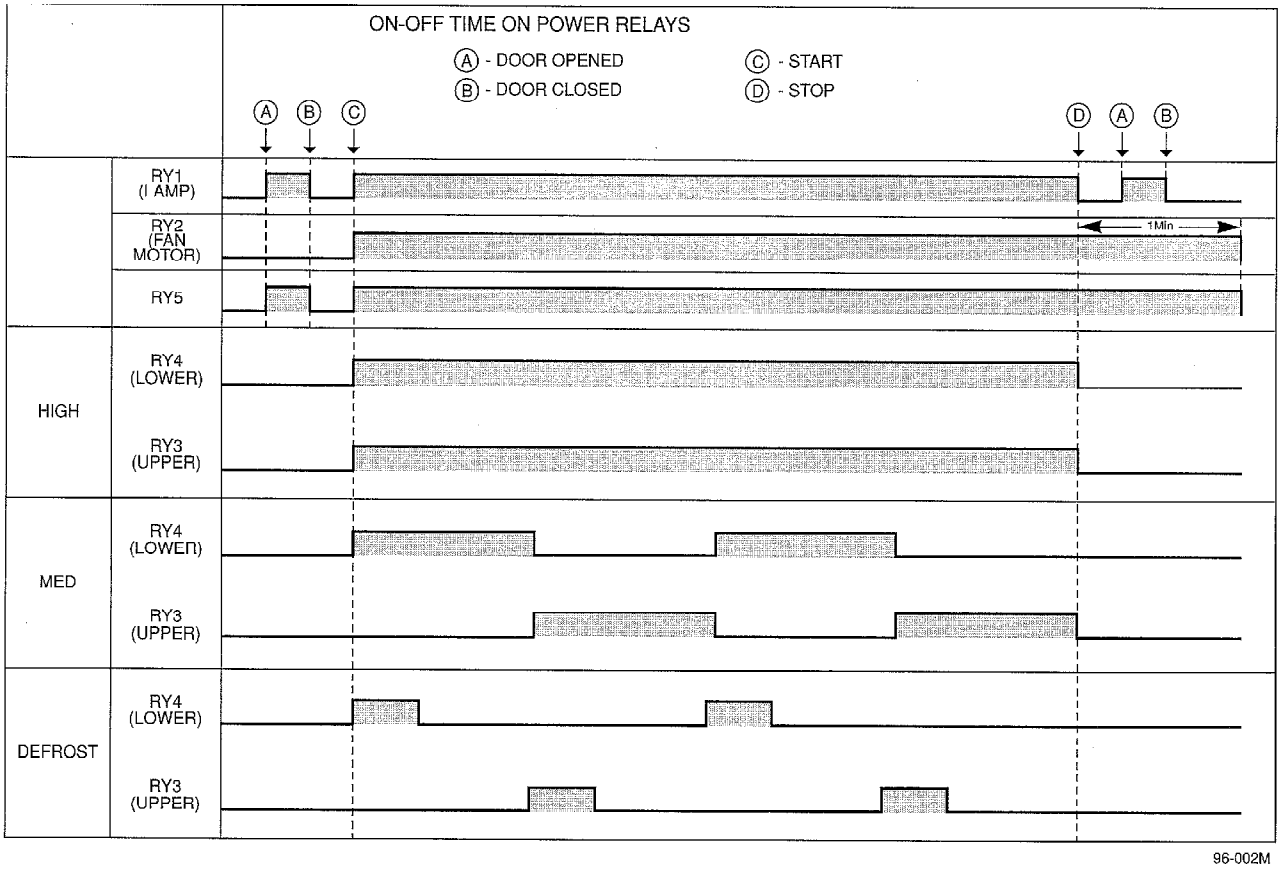
SAFETY SWITCH B (UPPER)

SYMBOL	COLOR
B	BLACK
R	RED
OR	ORANGE
GR	GRAY
BR	BROWN
Y	YELLOW
BL	BLUE
W	WHITE
PK	PINK

DESCRIPTION OF OPERATING SEQUENCE

Variable power cooking control

The coils of power relay RY3 and RY4 are energized intermittently by the digital programmer circuit, when the oven is set to MEDIUM or DEFROST power position. The digital programmer circuit controls the ON-OFF time of the power relay RY1 and RY2 contacts in order to vary the output power of the microwave oven. One complete ON and OFF cycle of the power relay is 44 seconds. The relation between indications on the control panel and the output power of the microwave oven is as shown in Figure below.



96-002M

WIRING REQUIREMENTS AND POWER SOURCE VOLTAGE SELECTION

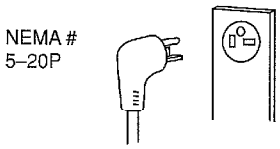
Wiring Requirements

No other appliance should share the circuit with the microwave oven. If it does, the branch circuit fuse may overload and either cause the oven to heat slower than expected or blow the fuse.

A. For Model NE-1257

The oven must be on a SEPARATE, 20 Amp, 60 Hz-120 V GROUNDED CIRCUIT.

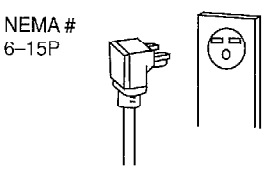
NE-1257



B. For Model NE-1757

1. This oven must be on a separate, 60 Hz GROUNDED CIRCUIT–minimum 15 amps.
2. The microwave ovens are built to operate on 2 different voltages (230 V or 208 V). Be sure that the voltage selector connector (on the back of the oven) is set for your power supply. Connecting oven to 230 volt line with 208 voltage setting is dangerous and may result in overheating of the electrical components thus shortening their life expectancy or possibly causing a fire or other accident. Connecting oven to 230 volt line with 208 voltage will lower the power output of the oven, resulting in slower heating of the food. Panasonic is NOT responsible for damage resulting from the use of the oven with other than specified voltage.

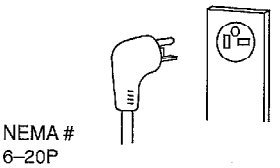
NE-1757



C. For Model NE-2157

1. This oven must be on a separate, 60 Hz GROUNDED CIRCUIT–minimum 20 amps.
2. The microwave ovens are built to operate on 2 different voltages (230 V or 208 V). Be sure that the voltage selector connector (on the back of the oven) is set for your power supply. Connecting oven to 230 volt line with 208 voltage setting is dangerous and may result in overheating of the electrical components thus shortening their life expectancy or possibly causing a fire or other accident. Connecting oven to 230 volt line with 208 voltage will lower the power output of the oven, resulting in slower heating of the food. Panasonic is NOT responsible for damage resulting from the use of the oven with other than specified voltage.

NE-2157



Power Source Voltage Selection

The microwave oven Models NE-1757 & NE2157 are factory set for 208 V operation. For 230 V operation, the following selection MUST be made.

(Step 1) Unscrew the voltage selection panel cover which is located on the back of the oven. Do not remove any other parts from the oven.

(Step 2) Remove the white connector and plug the black connector into the socket.

(Step 3) Store the unused white connector in the rectangular opening.

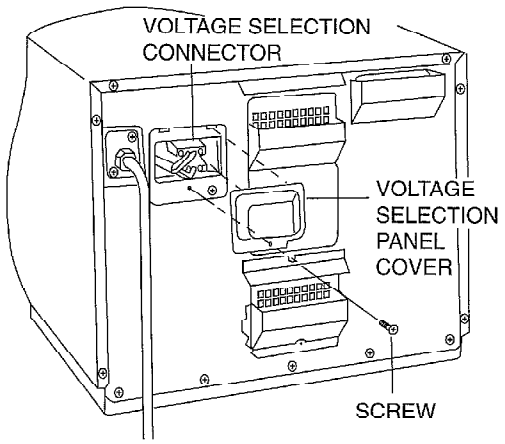
(Step 4) Reattach the voltage adjustment panel cover to the cabinet.

For 230 V— Use black connector plug.
For 208 V — Use white connector plug.

To go from 230 V to 208 V circuit follow steps 1–4 above, except at step 2, plug the white connector plug into the socket and store the black plug in the rectangular opening.

CAUTION

Make sure that the power cord is unplugged before removing the voltage selection panel cover.



CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used in a completely grounded condition. It is imperative, therefore, to make sure it is properly grounded before beginning repair work.

2. If the door lock, the door switch, the door seal or the door develops a malfunction, be sure not to operate the oven until complete repairs are made.

If the oven is operated with any of these parts in imperfect condition, hazardous microwave leakage might occur.

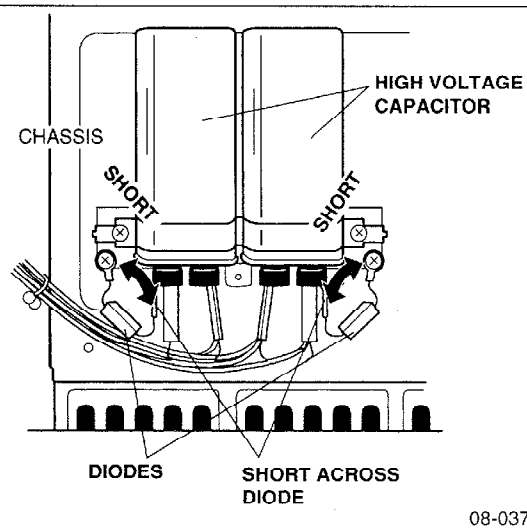
WARNING

There is high-voltage present, with high-current capabilities in the circuits of the high voltage winding and filament winding of the high voltage transformer. It is extremely dangerous to work on or near these circuits with oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

3. Warning about the electric charge in the high voltage capacitor

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor. When replacing or checking parts, remove the power plug from the outlet, walt 30 seconds and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated jumper lead wire or an insulated handle screwdriver to discharge.



08-037M

Discharge the 2 High Voltage Capacitors.
Touch chassis side first then short to the high voltage capacitor terminal.

Important Note

1. High voltage above 250 volts exist on the following parts during operation.
   - *Magnetron
   - *High Voltage Transformer
   - *High Voltage Diode
   - *High Voltage Capacitor

   Extra attention and caution should be used during repair or troubleshooting procedures.
2. If the microwave oven is operated with an incorrectly installed door hinge or magnetron, it can cause microwave leakage of over 5mW/cm^2.
   It is absolutely necessary to check if magnetron and door hinges are correctly and safely installed after repairs or replacement.

WARNING

Never touch any circuitry with either your hand or insulated tools while oven is energized.

4. When parts must be replaced, always remove the power plug from the outlet, and discharge the high voltage capacitor.

WARNING

When the 25/18 Amp. fuse is blown due to the operation of the Interlock Monitor Switch, you must replace the Secondary & Primary Interlock Switches, the Monitor Switch (Short Switch), Power Relay and the 25/18 Amp. 250V. fuse.

5. Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwave might leak if screws are not properly tightened.

(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.

6. Avoid inserting nails, wire, etc. through holes in unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

CAUTION

MICROWAVE RADIATION

Personnel should not be exposed to the microwave energy which may radiate from the magnetron or other microwave generating device if it is improperly used or connected. All input and output microwave connections, waveguides, flanges, and gaskets must be secure. Never operate the device without a microwave energy absorbing load attached. Never look into an open waveguide or antenna while the device is energized.

CAUTION

High voltage parts may become exposed when outer cabinet is removed.

DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Replacement of magnetrons

Upper magnetron

(A) Discharge electric charge remaining on the high voltage capacitors.
(B) Remove the entire rear panel by removing screws as shown. (FIG. 1)
(C) Disconnect all lead wires from magnetron and thermal cutout.
(D) Remove the 4 screws holding magnetron. (FIG. 2)
(E) Remove 2 screws holding thermal cutout.
(F) Remove the mounting bracket from magnetron and install it on the new magnetron.

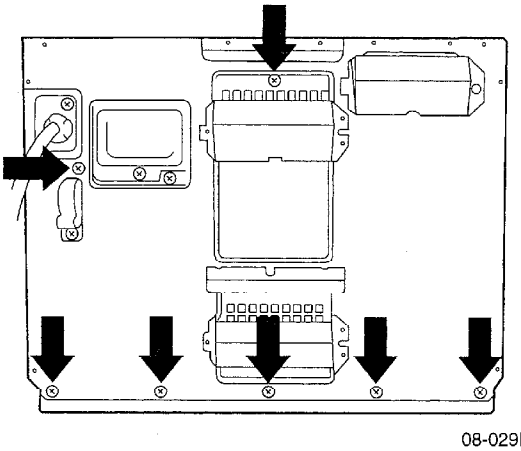
Lower magnetron

(A) Discharge electric charge remaining on the high voltage capacitors.
(B) Remove the entire rear panel by removing screws as shown. (FIG. 1)
(C) Carefully place the unit on its left side (H.V. Capacitor side).
(D) Remove the cover by removing 2 screws.
(E) Remove the 4 screws holding magnetron by inserting screwdriver through the 4 openings on bottom plate. (FIG. 3)
(F) Remove 2 screws holding thermal cutout.
(G) Remove the mounting bracket from magnetron and install it on the new magnetron. (FIG. 4)

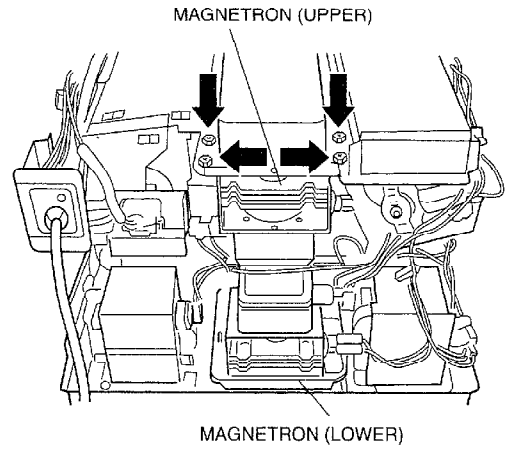
NOTE: **To prevent microwave leakage, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron.**

CAUTION

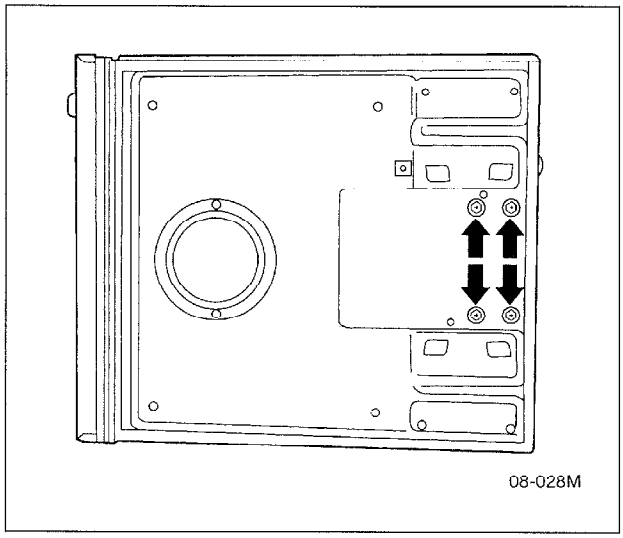
When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire with blue connector should be connected to "FA terminal" and the white or pink one should be connected to "F terminal".



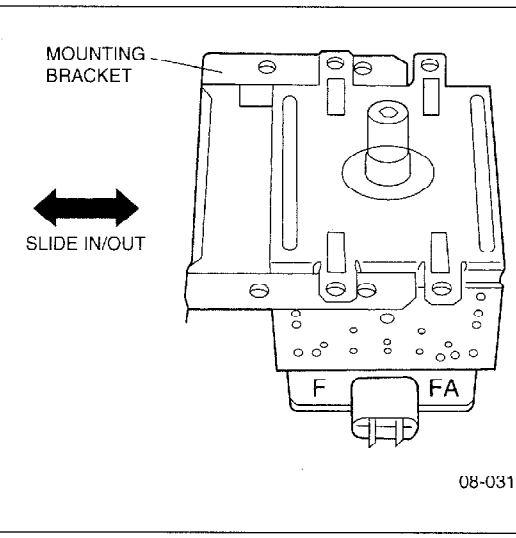
(FIG. 1)



(FIG. 2)



(FIG. 3)



(FIG. 4)

Removal of Positive Lock connector (FIG. 5) & (FIG. 8)
The positive lock connector is a specially designed locking type connector and you will find this connector in many lead wire connections. To remove this connector, pull the lead wire while pressing the locking lever in the center of receptacle terminal as shown.

2. Replacement of low voltage transformer circuit board

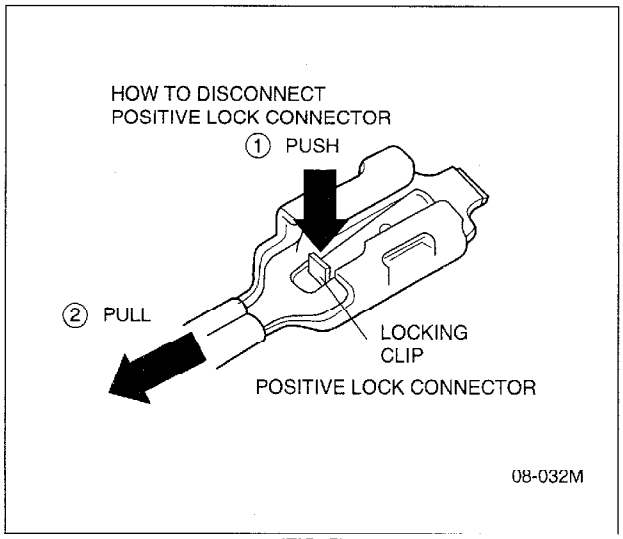
NOTE: Be sure to ground any static electric charge built up on your body before handling the low voltage transformer P.C.B. and D.P.C.

(A) Disconnect all lead wires from power supply circuit board.
(B) Remove the low voltage transformer P.C.B. together with its mounting bracket by first removing the 2 bracket holding screws.
(C) The low voltage transformer P.C.B. can be separated from mounting bracket by removing the 2 L.V.T. holding screws and unfastening the plastic clips.

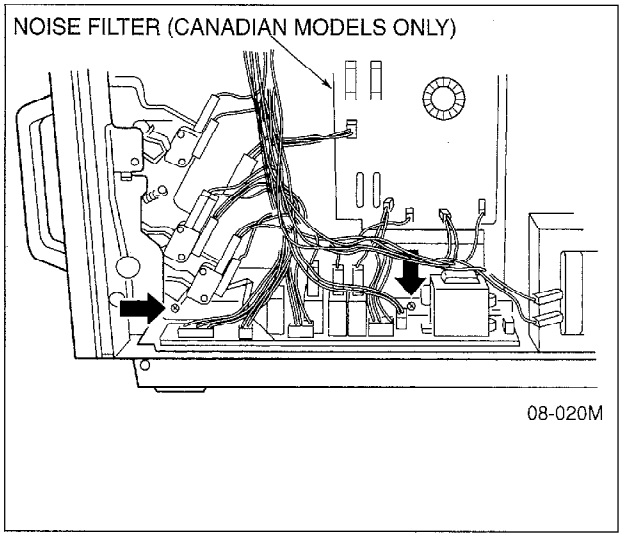
3. Replacement of digital programmer circuit board

(A) Remove grounding screw for membrane switch and D.P.C. ground. (FIG. 6)
(B) Remove 3 screws holding control panel assembly to detach it from main unit then remove connectors. (FIG. 7)
(C) Remove 2 screws holding the D.P.C. board and while pushing back on 2 plastic holding clips, remove the board.

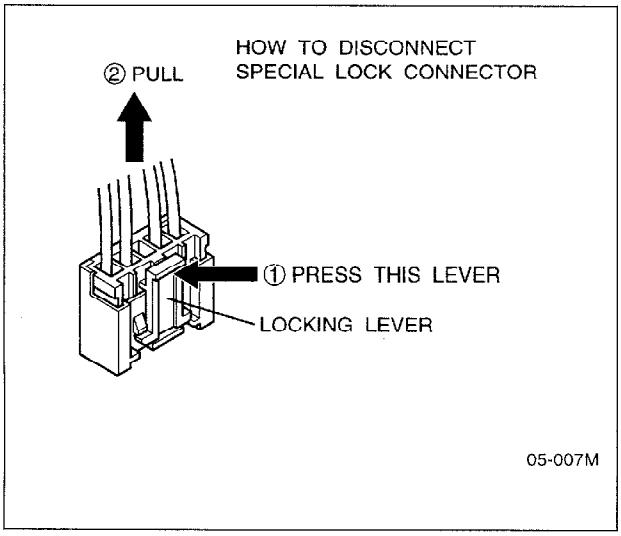
NOTE: Please use care in handling the low voltage transformer P.C.B. and D.P.C. board to avoid damage.



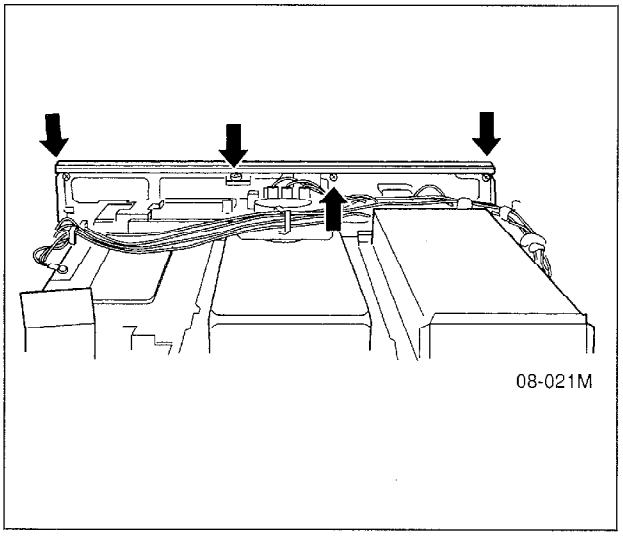
(FIG. 5)



(FIG. 6)



(FIG. 8)



(FIG. 7)

4. Replacement of upper antenna

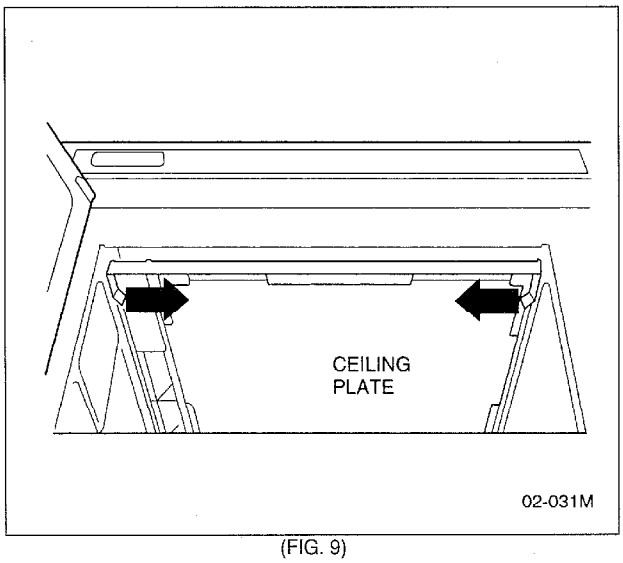
CAUTION

The upper and lower rotating antennas are different types and are not interchangeable with each other. Care should be taken not to reverse the top and bottom antennas.

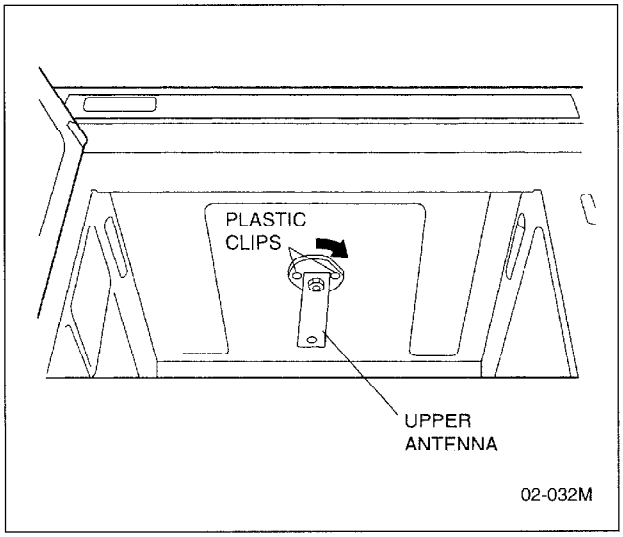
(A) Remove ceiling plate by gently moving the left and right tabs inward while pulling the plate down and outward. (FIG. 9)
(B) Using a small flat screwdriver or the like, remove two plastic clips located on the antenna ring. Next, turn the antenna ring approx. 1/8 turn clockwise to unhook the tabs and pull off. (FIG. 10)

5. Replacement of floor shelf and lower antenna

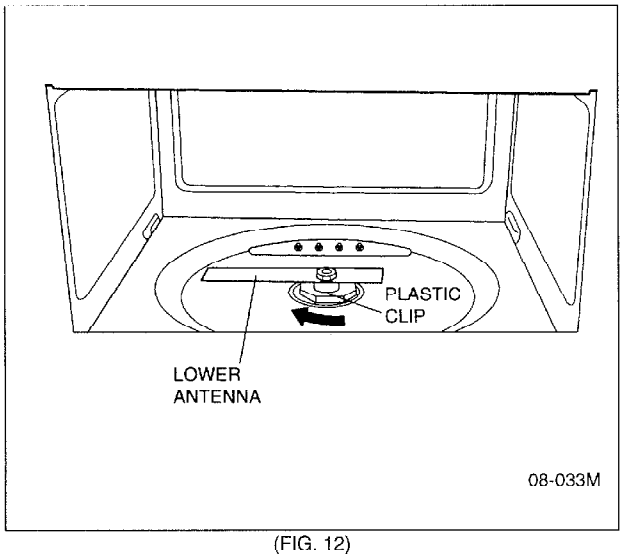
(A) To remove the floor shelf, insert a screwdriver through the small opening on the left side of the oven cavity and carefully lift (pry up) the floor shelf. (FIG. 11)
(B) For removal of lower antenna, use the same procedure as upper antenna. (FIG. 12)



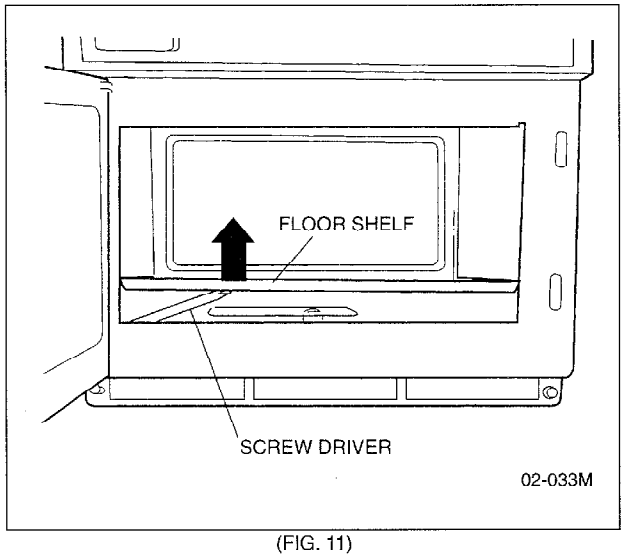
(FIG. 9)



(FIG. 10)



(FIG. 12)



(FIG. 11)

6. Replacement of temperature sensor (Thermal protector) (FIG. 13)

(A) Cut 2 lead wires at the top of sensor terminals.
(B) Remove 2 screws holding temp sensor and replace with new one.
(C) Solder the lead wires securely to the sensor terminals.

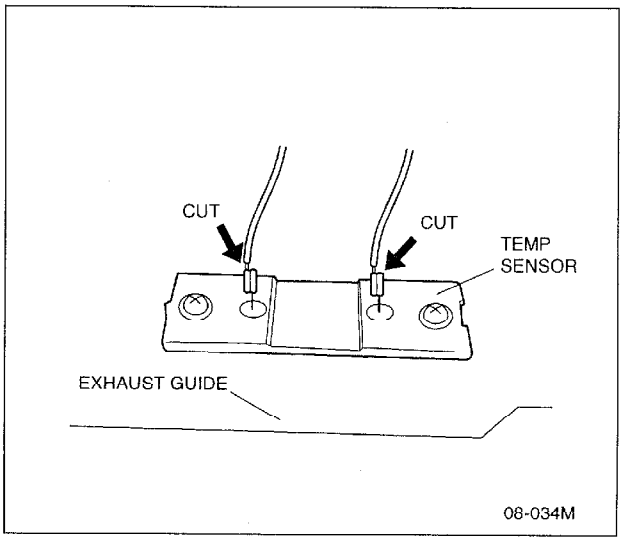
7. Disassembly of door assembly (FIG. 14)

(A) Remove 2 bolts each holding upper and lower hinges.
(B) Open the door and while pulling the door outward, work upper and lower hinges out through the holes of the front surface of oven.
(C) Remove door C (choke cover) from door E by carefully pulling outward, starting from the upper right hand corner.
(D) Remove 2 screws holding door handle and separate door A from door E by carefully freeing catch hooks.
(E) Remove door key, door key lever, door key spring and handle pins from door E.
(F) Assemble the door by taking the above steps in reverse order. "Refer to Door Assembly exploded view in the parts list section."

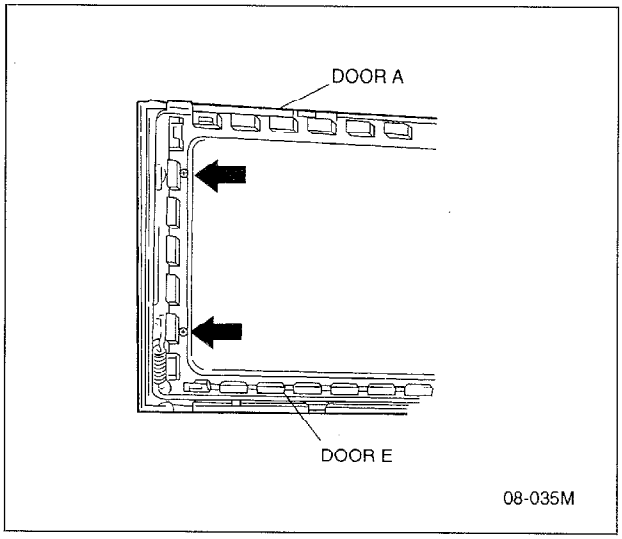
Replacement

(A) When mounting the door to the oven be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment. (FIG. 15)
(B) Adjust so that the door has no play between the inner door surface and oven front surface. If the door assembly is not mounted properly, microwave energy may leak from the clearance between the door and the oven. (FIG. 16)

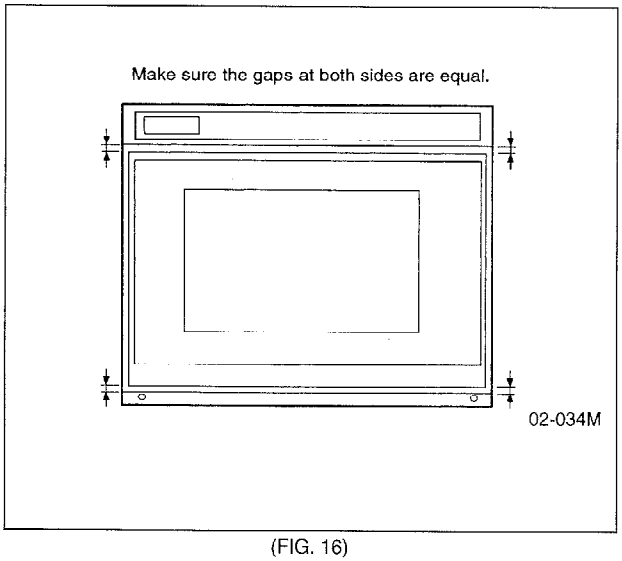
NOTE: Please refer to MEASUREMENTS AND ADJUSTMENTS section.



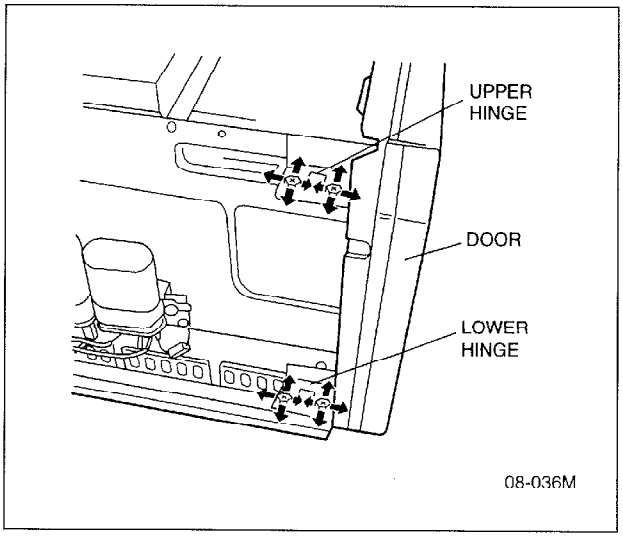
(FIG. 13)



(FIG. 14)



(FIG. 16)



(FIG. 15)

COMPONENT TEST PROCEDURE

CAUTION

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

1. High voltage transformer (FIG. 17)

(A) Remove connections from the transformer terminals and check continuity.

(B) Normal (cold) resistance readings should be as follows:

Secondary winding	Approx.	80Ω - 120Ω
Filament winding	Approx.	0Ω
Primary winding	Approx	0Ω - 3Ω

2. High voltage capacitor (FIG. 18)

(A) Check continuity of capacitor with meter on highest OHM scale.

(B) A normal capacitor will show continuity for a short time, and then indicate 9MΩ once the capacitor is charged.

(C) A shorted capacitor will show continuity all the time.

(D) An open capacitor will show constant 9MΩ.

(E) Resistance between each terminal and chassis should be infinite.

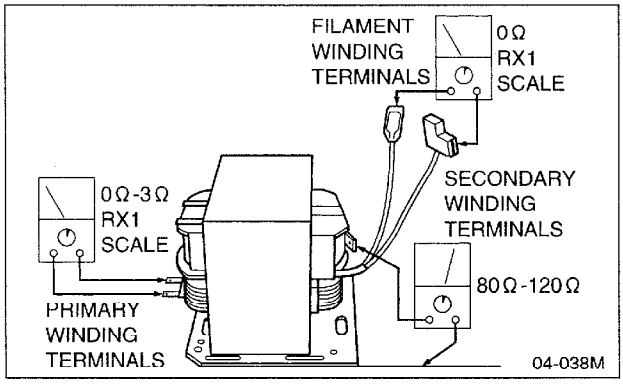
3. Magnetron (FIG. 19)

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.

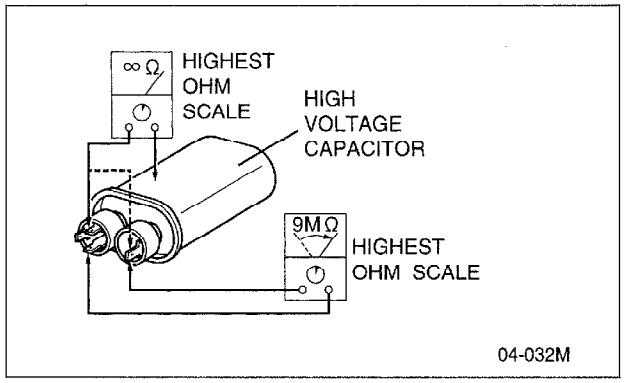
(A) Isolate magnetron from the circuit by disconnecting the leads.

(B) A continuity check across magnetron filament terminals should indicate one ohm or less.

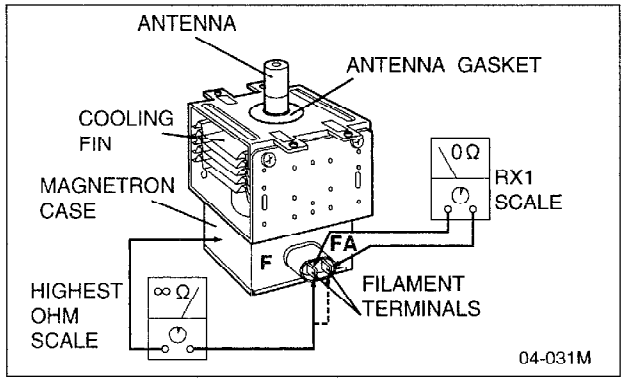
(C) A continuity check between each filament terminal and magnetron case should read infinite.



(FIG. 17)



(FIG. 18)

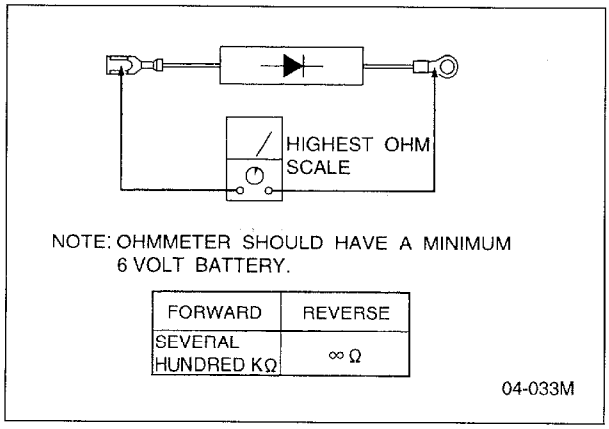


(FIG. 19)

4. Diode (FIG. 20)

(A) Isolate the diode from the circuit by disconnecting the leads.

(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. A meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred KΩ in the other direction.



(FIG. 20)

5. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by pressing an appropriate pad on the key board. The contacts layout of the respective pads on the key board is as shown in the digital programmer circuit.

6. Temp sensor (Thermal protector)

A temp sensor is mounted on the exhaust guide. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.
The thermal protector will shut the oven down when the temperature of the cavity reaches 257°F (125°C).
When the thermal protector exceeds its temperature limit, power to the oven cavity will turn off and display will go to reset mode.
The cooking program can be reset after cool-down.
THERMISTOR RESISTANCE VALUE
30K-120K at 10°C-30°C (50°F-86°F)

MEASUREMENTS AND ADJUSTMENTS

WARNING

For continued protection against excessive radiation emission, replace only with identical replacement parts. When the 18/25 Amp. fuse is blown due to the operation of the Interlock Monitor Switch, you must replace.

(A) TYPE V-16G-3C26 (ANE61424L0AG) for Secondary Interlock SW. (LATCH SW A) and TYPE V-15G-3C26 (ANE6142-F60) for Primary Interlock SW. (LATCH SW. B)

(B) TYPE V-16G-2C25 (ANE61784L0AG) for Monitor SW. (SHORT SW.).

(C) TYPE G5J-1-TP (AEBG5B18P-1) for Power Relay. (RY3, RY4)

(D) TYPE ABC RATED 250V, 18A fuse, (B62308250AP) for (NE-1757A/C & NE-2157A/C) or 25A fuse (B62303650AP) for (NE-1257A/C).

1. Installation of Safety switch A, Safety switch B and Short switch.

(A) When mounting Safety switch A, Safety switch B and short switch to door hook assembly, mount the Safety switch A, Safety switch B and the short switch to the door hook assembly as shown. (FIG. 21)

NOTE: No specific adjustment during installation of Safety switch A, Safety switch B and short switch to the door hook is necessary.

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in (FIG. 21) so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

(C) Reconnect the short switch, safety switches A&B and check the continuity of the monitor circuit and all latch switches again.

2. Measurement of microwave output

The power output of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer (Celsius scale)

*Wrist watch or stopwatch

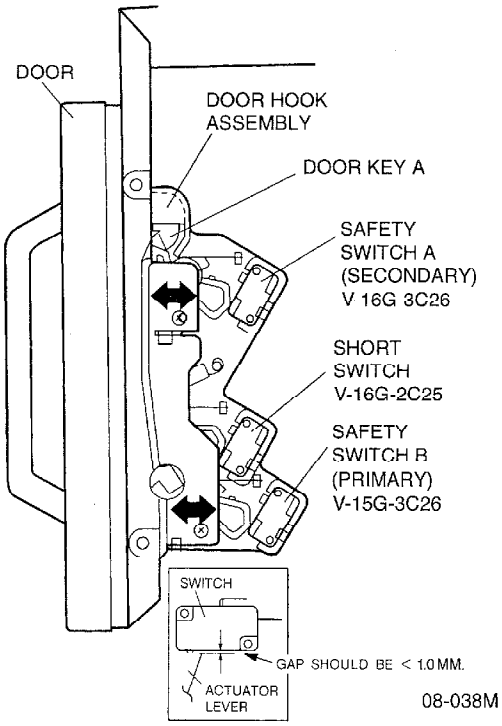
NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

(A) Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beaker's temperature (recorded as T1).

(B) Place the beaker on the center of ceramic shelf.

(C) Set the oven to High power and heat it for exactly one minute.

(D) Stir the water again and read the temperature of the beaker (recorded as T2). The normal temperature rise (T2-T1) at High power output for each model is as shown in table.



Please confirm that the gap between the switch housing and switch actuator levers is no more than 1.0 mm when the door is closed.

(FIG. 21)

TABLE (1ℓ-1min. test)

RATED OUTPUT	TEMPERATURE RISE
1200W (IEC705)	Min. 10.6°C
1700W (IEC705)	Min. 15.3°C
2100W (IEC705)	Min. 18.1°C

PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PHCC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE: The U.S. Government standard is 5 mW/cm² while in the customer's home. 2 mW/cm² stated here is our own voluntary standard. (1 mW/cm² for Canada)

1. Equipment

*Electromagnetic radiation monitor
*Glass thermometer 212°F or 100°C
*600cc glass beaker

2. Procedure for measuring radiation leakage.

Note before measuring.

(1) Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.

(2) To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area shown in Figure no faster than 1 inch/sec (2.5 cm/sec).

(3) Leakage with the outer panel removed ..... less than 5mW/cm².

(4) Leakage for a fully assembled oven with door normally closed..... less than 2mW/cm² (1mW/cm² for Canada).

(5) Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door..... less than 2mW/cm².

(A) Pour 275 ± 15cc (9ozs ± 1/2oz) of 20 ±5°C (68 ± 9°F) water in a beaker which has graduations to 600cc, and place in the center of the oven.

(B) Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.

(C) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.

(D) Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

(1) Measurement with the outer panel removed. (FIG. 22)

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken when measuring around the magnetron.

WARNING

Avoid contacting any high voltage parts.

(2) Measurements with a fully assembled oven. (FIG. 23)

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3. Record keeping and notification after measurement

(A) After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.

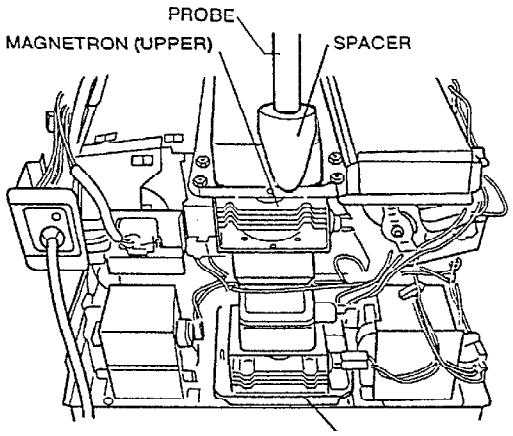
A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

(B) Should the radiation leakage be more than 2 mW/cm² (1mW/cm² for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PHCC, PSC or PCI.

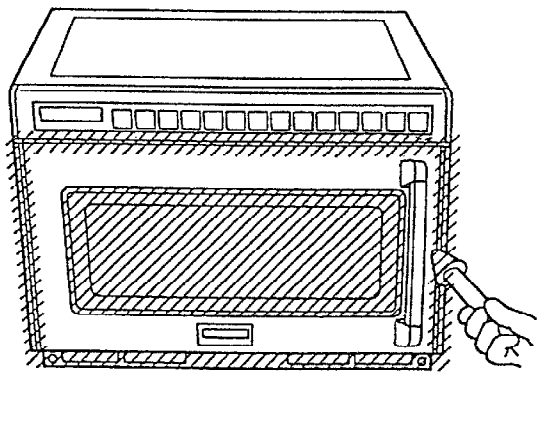
4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.



(FIG. 22)



(FIG. 23)

TROUBLESHOOTING GUIDE

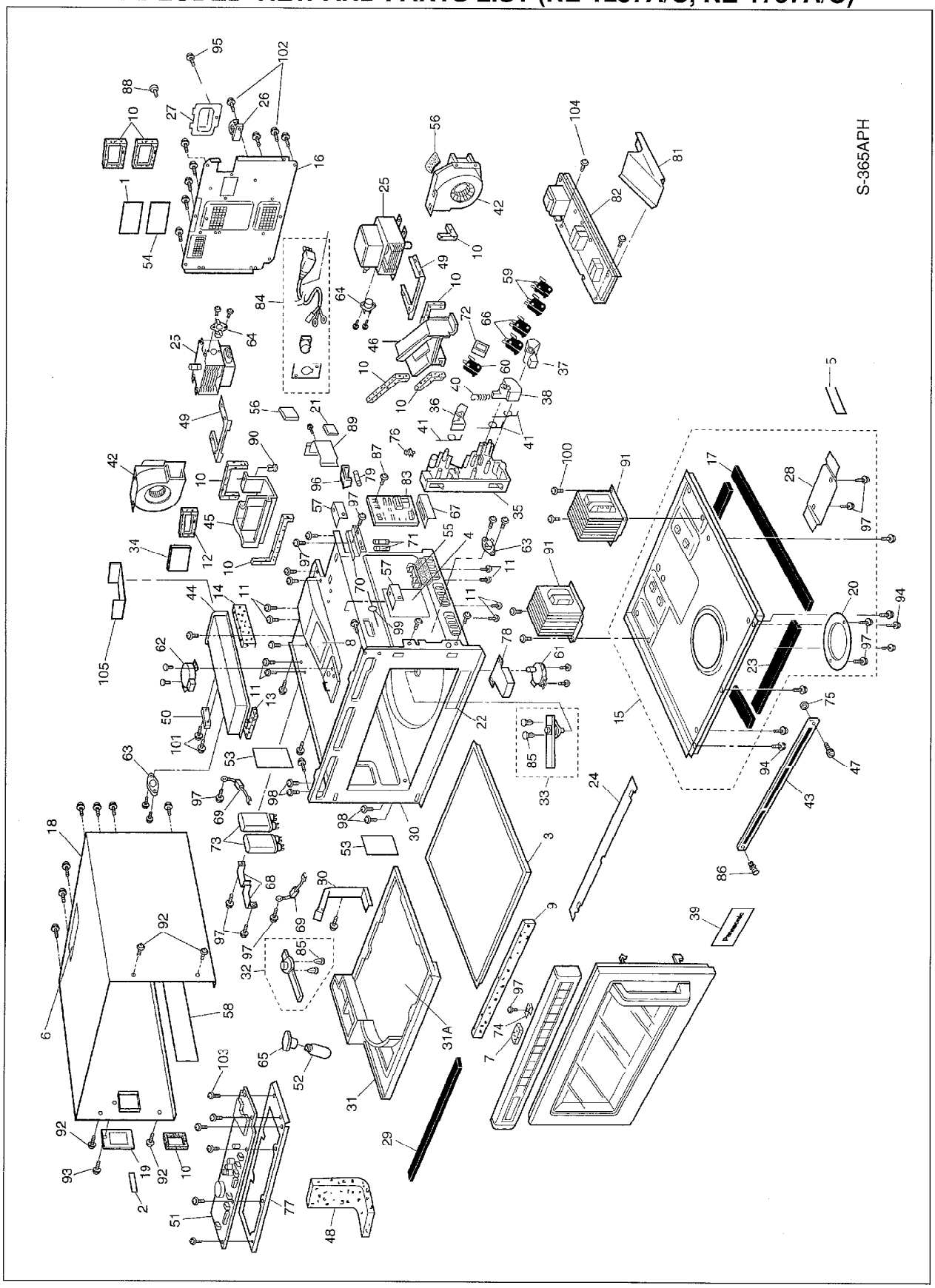
CAUTION

1. Ensure that the oven is properly grounded before proceeding with troubleshooting or repair.
2. Take the necessary precautions when troubleshooting or repairing the high voltage circuitry.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
   When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be open or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 208-230V AC is present on the terminals of power relay's and the primary circuit of the low voltage transformer. When troubleshooting, be cautious of possible electrical shock hazard.

Prior to troubleshooting, make sure that oven is operated as per instruction manual. Some symptoms may be mistaken for oven's malfunction, where in fact, they could have been caused by operator error.

DISPLAY BLINKS	CONDITIONS	POSSIBLE CAUSE	TIMING OF FAILURE INDICATION
F33	Open temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure 3. Loose connector CN4	It appears when failure occurs.
F34	Short temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure	It appears when failure occurs.
F44	Key board short	1. Shorted power select switch 2. Shorted membrane switch	It appears 2 minutes after failure occurs.
F01 (With continuous beep sounds)	Exhaust temperature exceeds 120°C	1. Burning food in the oven due to overcooking	It appears when exhaust temperature exceeds above 120°C.
F09	Error of 60 Hz model	1. Oven connected to 50 Hz power line instead of 60 Hz	It appears when oven is plugged in.
F03	Incoming line voltage too high	1. Replace voltage selection plug	It appears when oven is plugged in.
F04	Error of 60 Hz model	1. Replace voltage selection plug	It appears when oven is plugged in.
F05	Memory failure	1. Digital programmer circuit failure	
F81	No voltage supply to high voltage transformer (upper)	1. Relay failure RY-3 2. 25A/18A fuse open 3. Digital programmer circuit failure	It appears when cooking is completed.
F82	No voltage supply to high voltage transformer (lower)	1. Relay failure RY-4 2. 25A/18A fuse open 3. Digital programmer circuit failure	It appears when cooking is completed.
F86	Shorted contacts of RY-3	1. Relay failure RY-3 2. Digital programmer circuit failure	It appears when cooking is completed.
F87	Shorted contacts of RY-4	1. Relay failure RY-4 2. Digital programmer circuit failure	It appears when failure occurs.

EXPLODED VIEW AND PARTS LIST (NE-1257A/C, NE-1757A/C)



PARTS LIST (NE-1257A/C, NE-1757A/C)

NOTES: • When ordering replacement part(s), please use part number(s) shown in this parts list. Do not use description of the part.
• Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
• Items marked * supplied by MMOC (MAC). (U.S.A.)

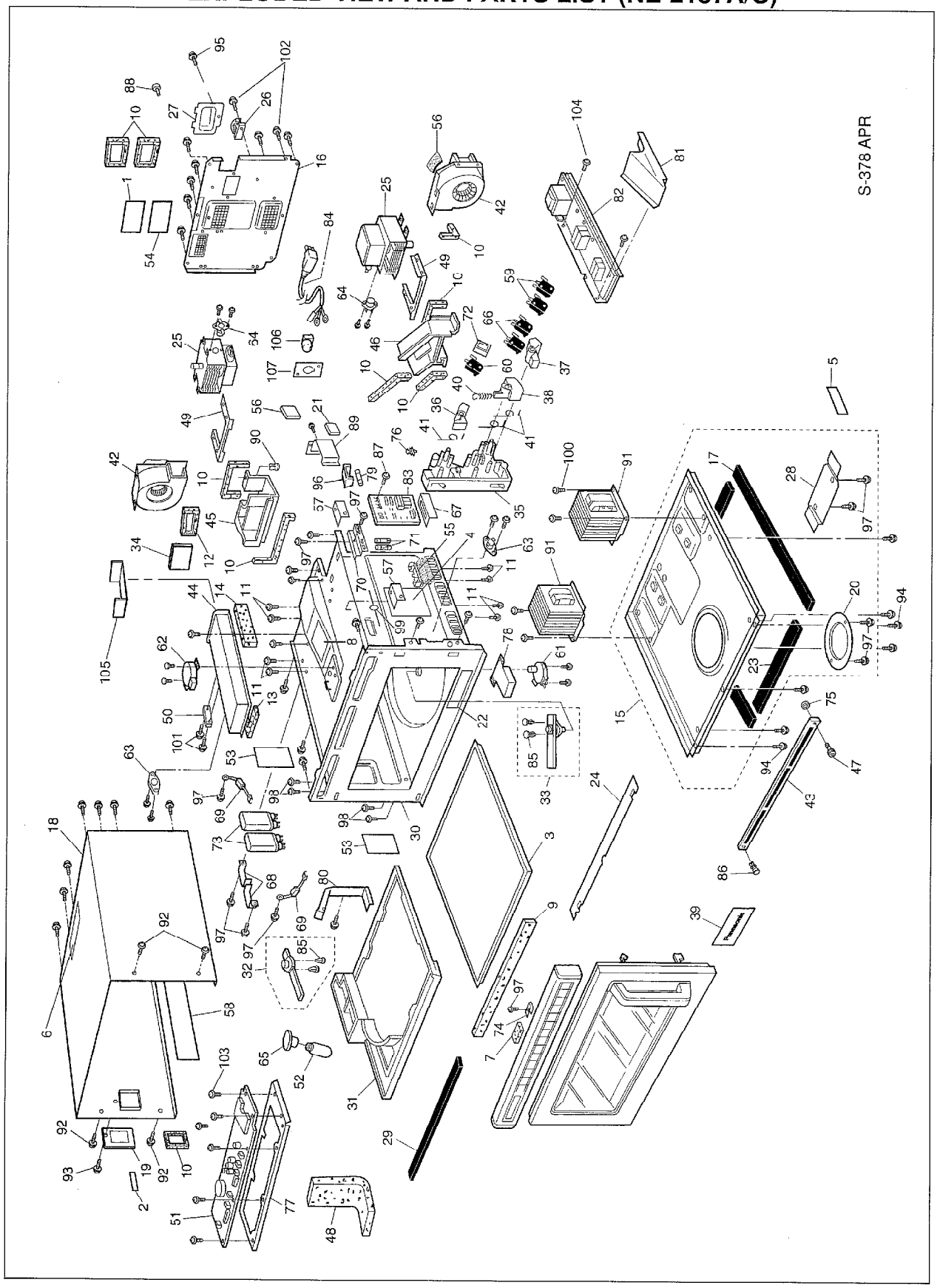
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
*1		B01723660AP	CAUTION LABEL	1	NE-1757A, NE-1757C
*2		B00723650AP	WARNING LABEL	1	
3		ANE010T8U0AP	SHELF	1	
*4		B00333650AP	FUSE LABEL	1	
*5		B00073650AP	NAME PLATE	1	NE-1257A
*5		B00073660AP	NAME PLATE	1	NE-1757A
*6		B01723650AP	CAUTION LABEL	1	
*7		AMQ0902000BA	CUSHION RUBBER A	1	
*8		B01503660AP	CAUTION LABEL	1	NE-1757A, NE-1757C
9		ANE11748U0AP	CUSHION RUBBER	1	
*10		B0922000AT	CUSHION RUBBER C	10	
*11		XYEANE5ıC16T	SCREW	8	5X16 (FOR MAGNETRON)
*12		B0922000AQ	CUSHION RUBBER C	1	
13		ANE0962000AP	CUSHION RUBBER D	1	
14		ANE0962000AV	CUSHION RUBBER D	1	
15		A100A3310BP	BASE	1	(NOTE 1)
16		A100Q-3280	BACK PANEL	1	
17		ANE10088U0AP	RUBBER FOOT	3	
18		ANE10098U0AP	CABINET BODY	1	
19		ANE10268U0AP	LAMP COVER	1	
20		ANE10288U0AP	ANTENNA MOTOR COVER	1	
21		ANE10498U0AP	CUSHION RUBBER	1	
*22		B04114180CP	CSA LABEL	1	NE-1257C, NE-1757C
*22		B02453650AP	DHHS LABEL	1	NE-1257A, NE-1757A
23		ANE10948U0AP	RUBBER FOOT B	1	
24		ANE11268U0AP	BASE BRACKET	1	
*25	⚠	2M210-M1F	MAGNETRON	2	
*26		B11404960AQ	STOPPER A	1	
27		ANE11548U0AP	BACK PANEL COVER	1	
28		ANE11668U0AP	BASE METAL	1	
29		ANE11748U0AP	SPACER	1	
30		A200A-3280	OVEN	1	
31		ANE20358U0AP	CEILING PLATE RAIL A	1	
31A	⚠	ANE20118U0AP	CEILING PLATE	1	
32		A202K-3280	ANTENNA (U)	1	UPPER
33		A202V3310GP	ANTENNA B (U)	1	LOWER
34		ANE21208U0AP	SPACER	1	
35		A3020-3470	DOOR HOOK	1	
36		ANE31368U0AP	HOOK SPACER A	1	
37		A3137-3470	HOOK SPACER B	1	
38		A3138-3470	HOOK SPACER C	1	
39		ANE31868U0BP	DOOR PANEL	1	NE-1257A, NE-1257C
39		ANE31868V0BP	DOOR PANEL	1	NE-1757A, NE-1757C
40		ANE32398U0AP	SPRING	1	
41		ANE32628U0AP	SPRING B	3	
42	⚠	ANE400A8U0AP	FAN MOTOR	2	NE-1257A, NE-1257C
42	⚠	ANE400A8U0BP	FAN MOTOR	1	NE-1757A, NE-1757C
43		A400B-3280	AIR FILTER FRAME	1	
44		A400K-3180	EXHAUST GUIDE	1	
45		ANE40258U0AP	AIR GUIDE A	1	UPPER
46		ANE40268U0AP	AIR GUIDE B	1	LOWER
47		A4091-3280	SCREW	1	(FOR AIR FILTER FRAME)
*48		B0929000AM	CUSHION	1	
49		ANE50328U0AP	MAGNETRON BRACKET	2	
50	⚠	A601L5150AP	TEMP SENSOR	1	
*51	⚠	B603L3650AP	D.P. CIRCUIT (U)	1	NE-1257A/C RTL (W/COMPONENTS)
*51	⚠	B603L3660AP	D.P. CIRCUIT (U)	1	NE-1757A/C RTL (W/COMPONENTS)
*52		B60304740AQ	INCANDESCENT LAMP	1	NE-1257A, NE-1257C (125V, 20W)
*52		B60304080BP	INCANDESCENT LAMP	1	NE-1757A, NE-1757C (240V, 20W)
53		ANE60408U0AP	OVEN LAMP SHEET	2	

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
*54		B00066260AP	WARNING LABEL	1	NE-1257A, NE-1757A
*54		B00067600CP	WARNING LABEL	1	NE-1257C, NE-1757C
*55		B0921000CJ	CUSHION RUBBER A	1	NE-1257A, NE-1757A
*56		AMQ0902000FD	CUSHION RUBBER A	2	
57		A6070-3280	INSULATION SHEET A	2	
58		A6071-3280	INSULATION SHEET B	1	
59	⚠	ANE614-F60	MICROSWITCH	2	(V-15G-3C26) PRIMARY LATCH SWITCH
60	⚠	ANE61424L0AG	MICROSWITCH	1	(V-16G-3C26) SECONDARY LATCH SWITCH
61	⚠	A6144-3280	ANTENNA MOTOR	1	LOWER (2.5W)
62	⚠	A61446030AP	ANTENNA MOTOR	1	NE-1257A, NE-1257C UPPER (2.5W)
62	⚠	A61443660AP	ANTENNA MOTOR	1	NE-1757A, NE-1757C UPPER (2.5W)
63	⚠	ANE61458U0AP	THERMAL CUTOUT	1	NE-1257A, NE-1757A (FOR OVEN)
63	⚠	ANE61454L0AG	THERMAL CUTOUT	1	NE-1257C, NE-1757C (FOR OVEN EXHAUST)
64	⚠	ANE61458U0AP	THERMAL CUTOUT	2	(FOR MAGNETRON)
*65	⚠	B61523780AP	SOCKET	1	
66		ANE61784L0AG	MICRO SWITCH	2	(V-16G-2C25) SHORT SWITCH
67		A6170-3280	INSULATION SHEET C	1	
68		ANE6188U0AP	CAPACITOR BRACKET	2	
*69		AMQ62024X0AG	DIODE, SI	2	
70		ANE62298U0AP	MOUNTING BRACKET	1	
*71	⚠	B62308250AP	FUSE	2	NE-1757A, NE-1757C (18A)
72		ANE6238X20AP	SPACER	1	
*73	⚠	B60903650AP	H.V. CAPACITOR	2	NE-1257A, NE-1257C (.65μf, AC2000V)
*73	⚠	B60903660AP	H.V. CAPACITOR	2	NE-1757A, NE-1757C (.95μf, AC2000V)
74		ANE64086Q0AP	WASHER	1	
75		A6408-3280	WASHER	1	(FOR AIR FILTER FRAME)
76		ANE65448U0AP	SPACER A	1	
77		A6585-3280	P.C.B. HOLDER	1	
78		A65943030GP	MOTOR COVER	1	
*79	⚠	B62303650AP	FUSE	1	NE-1257A, NE-1257C (25A)
80		ANE66038U0BP	OVEN LAMP BRACKET	1	
81		A6688-3180	P.C.B. COVER	1	
*82	⚠	B692M3650AP	L.V. TRANSFORMER P.C.B. (U)	1	NE-1257A, NE-1257C
*82	⚠	B692M3660AP	L.V. TRANSFORMER P.C.B. (U)	1	NE-1757A, NE-1757C
*83	⚠	B605S3650CP	NOISE FILTER (U)	1	NE-1257C
*83	⚠	B605S3660CP	NOISE FILTER (U)	1	NE-1757C
*84	⚠	B900C3650AP	AC CORD W/PLUG (U)	1	NE-1257A (120V)
*84	⚠	B900C3660AP	AC CORD W/PLUG (U)	1	NE-1757A (230V)
*84	⚠	B900C3650CP	AC CORD W/PLUG (U)	1	NE-1257C (120V)
*84	⚠	B900C3660CP	AC CORD W/PLUG (U)	1	NE-1757C (230V)
85		ANE900T8V0AP	CLIP	2	(FOR ANTENNA (U), ANTENNA B (U))
86		ANE90828U0AP	CLIP (BLACK)	1	(FOR AIR FILTER FRAME)
87		XYN4DF10BN	SCREW	1	4X10 (FOR NOISE FILTER (U))
88		ANE91438U0AP	CLIP (GRAY)	1	(FOR BACK PANEL)
89		ANE91448U0AP	BRACKET	1	
90		ANE91628U0AP	CLIP B	1	(FOR AIR GUIDE A)
*91		B621C3650AP	H.V. TRANSFORMER	2	NE-1257A, NE-1257C (1.5KVA)
*91		B621C3660AP	H.V. TRANSFORMER	2	NE-1757A, NE-1757C (1.5KVA)
92		XTC4+10BC	SCREW	4	4X10 (FOR CABINET BODY)
93		XTC4+10FC	SCREW	1	4X10 (FOR LAMP COVER)
94		XTC4+12BK	SCREW (BLACK)	4	4X12 (FOR BASE)
95		XTT4+8E	SCREW	1	4X8 (FOR BACK PANEL COVER)
*96	⚠	B62314000AP	FUSE HOLDER	1	NE-1257A
*96	⚠	B62314000AP	FUSE HOLDER	2	NE-1757A
97		XYD4+EE12F	SCREW	10	(4X12) FOR MOUNTING BRACKET, DIODE, CAPACITOR BRACKET, AC CORD W/PLUG, ANTENNA MOTOR COVER, BASE METAL
98		XSWANE5+10U	SCREW	4	5X10 (FOR HINGE)
99		A604Q3650AP	SURGE SUPPRESSOR (U)	1	NE-1257A, NE-1757A
100		XTEANE5+10B	SCREW	4	5X10 (FOR H.V. TRANSFORMER)
101		XTWANE3+8EX	SCREW	2	3X8 (FOR TEMP SENSOR)
102		XTWANE4+12BN	SCREW	7	4X12 (FOR STOPPER A & BACK PANEL)
103		XTW3+8J	SCREW	6	3X8 (FOR MAIN P.C.B. & SURGE SUPPRESSOR)
104		XYN3+F25S	SCREW	2	3X25 (FOR L.V. TRANSFORMER P.C.B.)
*105		B50493780CP	FIRE BARRIER	1	NE-1257C, NE-1757C

NOTE 1: Please order name plate and base together

MEMO

EXPLODED VIEW AND PARTS LIST (NE-2157A/C)



PARTS LIST (NE-2157A/C)

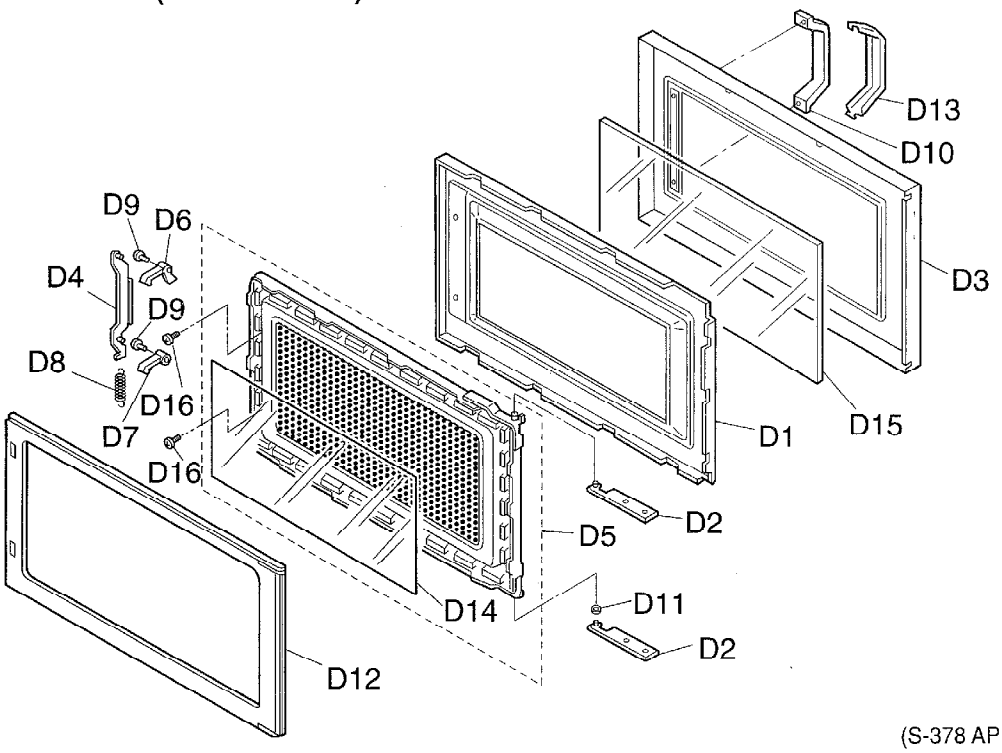
NOTES: • When ordering replacement part(s), please use part number(s) shown in this parts list. Do not use description of the part.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.
- Items marked * supplied by MMOC (MAC). (U.S.A.)
- Items marked # are new Part No's. for Pre I.G. (Initial Guidance) list.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
*1		B05103660AP	CAUTION LABEL	1	
*2		B00723650AP	WARNING LABEL	1	
3		ANE010T8U0AP	SHELF	1	
*4		B00333780AP	FUSE LABEL	1	
*5		B00073650AP	NAME PLATE	1	NE-2157A
*5		B00073214CP	NAME PLATE	1	NE-2157C
*6		B01723650AP	CAUTION LABEL	1	
*7		AMQ0902000BA	CUSHION RUBBER A	1	
*8		B01503660AP	CAUTION LABEL	1	
9		ANE11748U0AP	CUSHION RUBBER	1	
*10		B0922000AT	CUSHION RUBBER C	2	
*11		XYE5+C16TG	SCREW	8	5X16 (FOR MAGNETRON)
*12		B0922000AQ	CUSHION RUBBER C	1	
13		ANE0962000AP	CUSHION RUBBER D	1	
14		ANE0962000AV	CUSHION RUBBER D	1	
15		A100A3310BP	BASE	1	(NOTE 1)
16		A100Q-3280	BACK PANEL	1	
17		ANE10088U0AP	RUBBER FOOT	3	
18		ANE10098U0AP	CABINET BODY	1	
19		ANE10268U0AP	LAMP COVER	1	
20		ANE10288U0AP	ANTENNA MOTOR COVER	1	
21		ANE10498U0AP	CUSHION RUBBER	1	
*22		B04114180CP	CSA LABEL	1	NE-2157C
*22		B02453650AP	DHHS LABEL	1	NE-2157A
23		ANE10948U0AP	RUBBER FOOT B	1	
24		ANE11268U0AP	BASE BRACKET	1	
*25#	⚠	2M244-M1F1	MAGNETRON	2	
*26		B11404960AQ	STOPPER A	1	
27		ANE11548U0AP	BACK PANEL COVER	1	
28		ANE11668U0AP	BASE METAL	1	
29		ANE11748U0AP	SPACER	1	
30		A200A-3280	OVEN	1	
31		A2011-3470	CEILING PLATE	1	
32		A202K-3280	ANTENNA (U)	1	UPPER
33		A202V-3280	ANTENNA B (U)	1	LOWER
34		ANE21208U0AP	SPACER	1	
35		A3020-3470	DOOR HOOK	1	
36		ANE31368U0AP	HOOK SPACER A	1	
37		A3137-3470	HOOK SPACER B	1	
38		A3138-3470	HOOK SPACER C	1	
39		A31863780AP	DOOR PANEL	1	
40		ANE32398U0AP	SPRING	1	
41		ANE32628U0AP	SPRING B	3	
42#	⚠	A400A3780AP	FAN MOTOR	1	
43		A400B-3280	AIR FILTER FRAME	1	
44		A400K-3180	EXHAUST GUIDE	1	
45		ANE40258U0AP	AIR GUIDE A	1	UPPER
46		ANE40268U0AP	AIR GUIDE B	1	LOWER
47		A4091-3280	SCREW	1	(FOR AIR FILTER FRAME)
*48		B0929000AM	CUSHION	1	
49		ANE50328U0AP	MAGNETRON BRACKET	2	
50	⚠	A601L5150AP	TEMP SENSOR	1	
*51#	⚠	B603L3780AP	D.P. CIRCUIT (U)	1	RTL (W/COMPONENTS)
*52		B60304080BP	INCANDESCENT LAMP	1	(240V, 20W)
53		A60403780AP	OVEN LAMP SHEET	2	

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
*54		B00066260AP	WARNING LABEL	1	NE-2157A
*54		B00067600CP	WARNING LABEL	1	NE-2157C
*55		B0921000CJ	CUSHION RUBBER A	1	
*56		AMQ0902000FD	CUSHION RUBBER A	2	
57		A6070-3280	INSULATION SHEET A	2	
58		A6071-3280	INSULATION SHEET B	1	
*59	⚠	ANE6142-F60	MICROSWITCH	2	(V-15G-3C26) PRIMARY LATCH SWITCH
*60#	⚠	ANE61424L0AG	MICROSWITCH	1	(V-16G-3C26) SECONDARY LATCH SWITCH
61	⚠	A61443030GP	ANTENNA MOTOR	1	LOWER (2.5W)
62	⚠	A61443660AP	ANTENNA MOTOR	1	UPPER (2.5W)
63	⚠	ANE61458U0AP	THERMAL CUTOUT	1	NE-2157A (FOR OVEN)
63	⚠	ANE61454L0AG	THERMAL CUTOUT	1	NE-2157C (FOR OVEN EXHAUST)
64	⚠	ANE61458U0AP	THERMAL CUTOUT	2	(FOR MAGNETRON)
*65	⚠	B61523780AP	SOCKET	1	
*66		ANE61784L0AG	MICRO SWITCH	2	(V-16G-2C25) SHORT SWITCH
67		A6170-3280	INSULATION SHEET C	1	
68		ANE6188U0AP	CAPACITOR BRACKET	2	
*69#		B62023780AP	DIODE, SI	2	
70		ANE62298U0AP	MOUNTING BRACKET	1	
*71#	⚠	B62308250AP	FUSE	2	NE-2157A (18A)
72		ANE6238X20AP	SPACER	1	
*73#	⚠	B63903780AP	H.V. CAPACITOR	2	(1.0μf, AC2200V)
74		ANE64086Q0AP	WASHER	1	
75		A6408-3280	WASHER	1	(FOR AIR FILTER FRAME)
76		ANE65448U0AP	SPACER A	1	
77		A6585-3280	P.C.B. HOLDER	1	
78		A65943030GP	MOTOR COVER	1	
*79	⚠	B62308250AP	FUSE	2	NE-2157C (18A) (ON NOISE FILTER)
80		ANE66038U0BP	OVEN LAMP BRACKET	1	
81		A6688-3180	P.C.B. COVER	1	
*82	⚠	B692M3660AP	L.V. TRANSFORMER P.C.B. (U)	1	
*83#	⚠	B605S3780CP	NOISE FILTER (U)	1	NE-2157C
*84#	⚠	B900C3780AP	AC CORD W/PLUG	1	NE-2157A (230V)
*84#	⚠	B900C3780CP	AC CORD W/PLUG	1	NE-2157C (230V)
85		ANE900T8V0AP	CLIP	2	(FOR ANTENNA (U), ANTENNA B (U))
86		ANE90828U0AP	CLIP (BLACK)	1	(FOR AIR FILTER FRAME)
87		XYN4DF10BN	SCREW	1	4X10 (FOR NOISE FILTER (U))
88		ANE91438U0AP	CLIP (GRAY)	1	(FOR BACK PANEL)
89		ANE91448U0AP	BRACKET	1	
90		ANE91628U0AP	CLIP B	1	(FOR AIR GUIDE A)
*91#		B621C3780AP	H.V. TRANSFORMER	2	(1.5KVA)
92		XTC4+10BC	SCREW	4	4X10 (FOR CABINET BODY)
93		XTC4+10FC	SCREW	1	4X10 (FOR LAMP COVER)
94		XTC4+12BK	SCREW (BLACK)	4	4X12 (FOR BASE)
95		XTT4+8E	SCREW	1	4X8 (FOR BACK PANEL COVER)
*96	⚠	B62314000AP	FUSE HOLDER	2	NE-2157A
97		XYD4+EE12F	SCREW	10	(4X12) FOR MOUNTING BRACKET, DIODE, CAPACITOR BRACKET, AC CORD W/PLUG, ANTENNA MOTOR COVER, BASE METAL
98		XSWANE5+10U	SCREW	4	5X10 (FOR HINGE)
99		A604Q3650AP	SURGE SUPPRESSOR (U)	1	NE-2157A
100		XTEANE5+10B	SCREW	4	5X10 (FOR H.V. TRANSFORMER)
101		XTWANE3+8EX	SCREW	2	3X8 (FOR TEMP SENSOR)
102		XTWANE4+12BN	SCREW	7	4X12 (FOR STOPPER A & BACK PANEL)
103		XTW3+8J	SCREW	6	3X8 (FOR MAIN P.C.B. & SURGE SUPPRESSOR)
104		XYN3+F25S	SCREW	2	3X25 (FOR L.V. TRANSFORMER P.C.B.)
*105		B50493780CP	FIRE BARRIER	1	NE-2157C
*106		B90273650AP	AC CORD BUSHING	1	
107		A90353040AP	CORD BRACKET	1	

NOTE 1: Please order name plate and base together

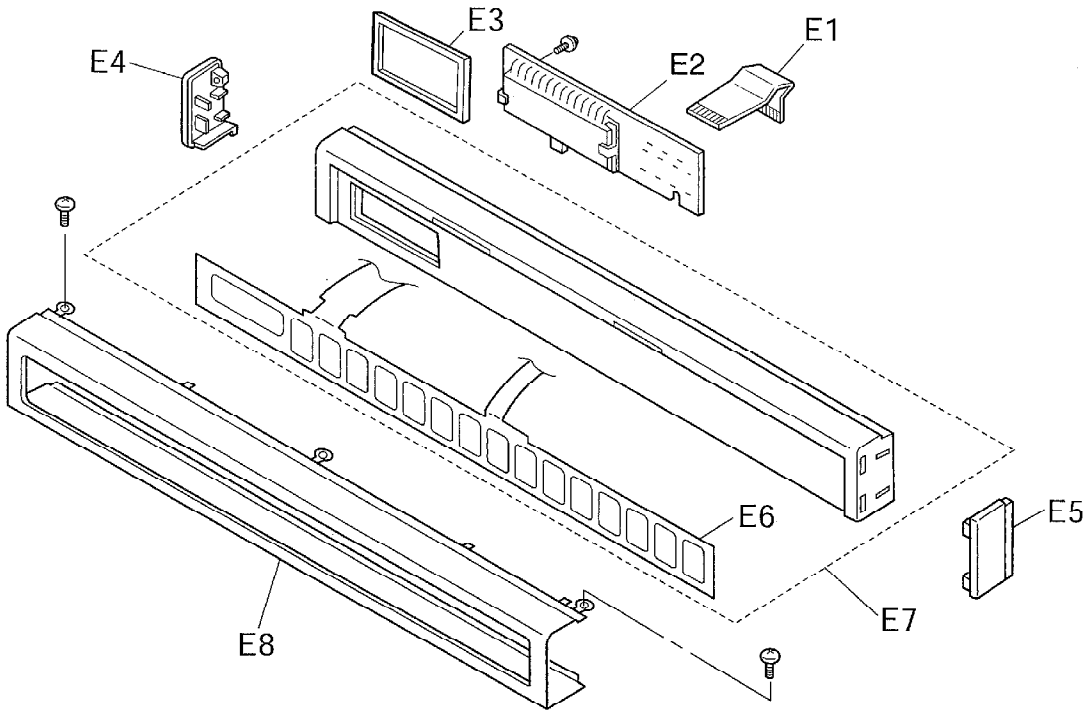
DOOR ASSEMBLY (ALL MODELS)



(S-378 APR)

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		ANE30038U0AP	DOOR FRAME (U)	1	
D2		ANE30078U0AP	HINGE	2	
D3		ANE301A8U0AP	DOOR A (U)	1	
D4		ANE301H8U0AP	DOOR KEY LEVER B	1	
D5		ANE301Q8U0AP	DOOR E (U)	1	
D6		ANE30188U0AP	DOOR KEY	1	
D7		ANE30198U0AP	DOOR KEY B	1	
D8		ANE30218U0AP	DOOR KEY SPRING	1	
D9		ANE30562Q0AP	HANDLE PIN	2	
D10		A30703170GP	HANDLE PIECE A	1	
D11		ANE3081P60AP	DOOR HINGE SPACER	1	
D12		ANE30858U0AP	DOOR C	1	
D13		ANE31348U0AP	HANDLE PIECE B	1	
D14		ANE31458U0AP	DOOR SCREEN A	1	
D15		ANE31468U0AP	DOOR SCREEN B	1	
D16		XYEANE4+C16T	SCREW	2	4X16 (FOR DOOR E)

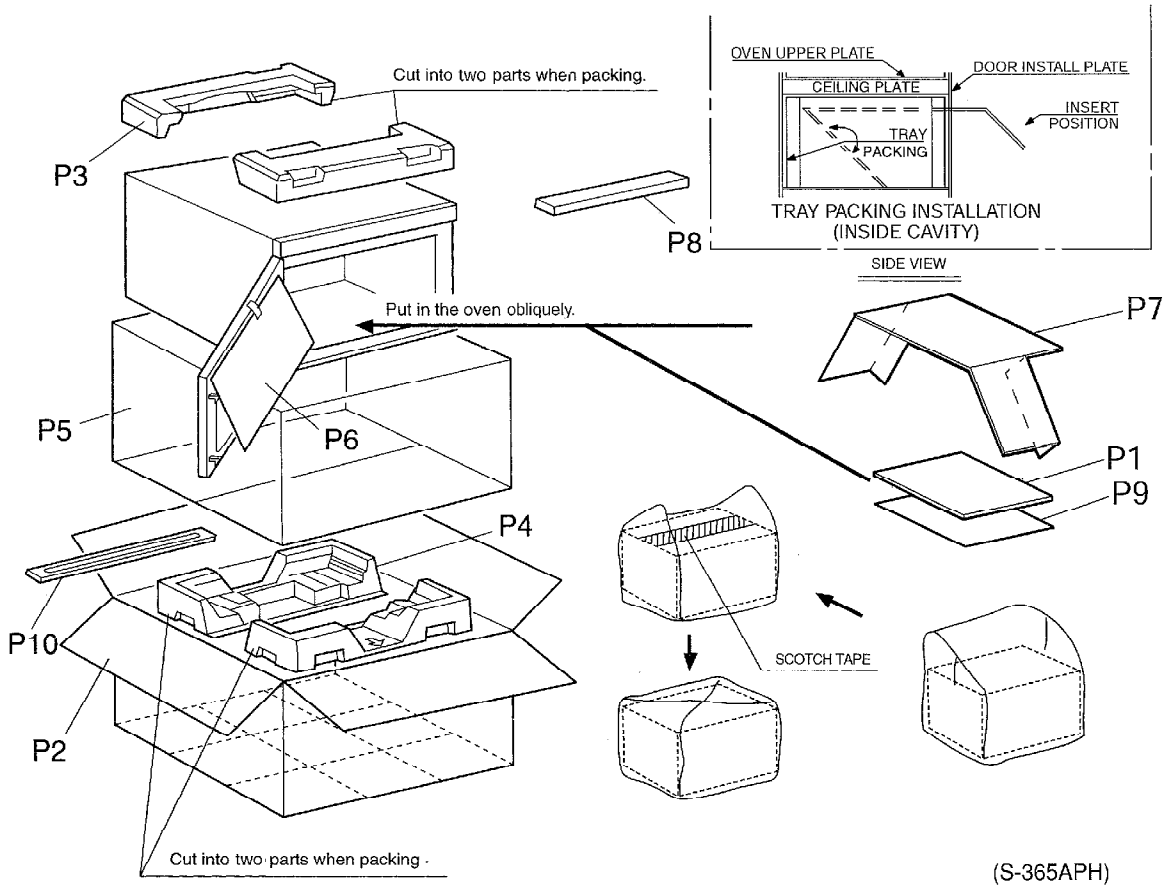
ESCUTCHEON BASE ASSEMBLY (ALL MODELS)



(S-378 APR)

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		A6590-3280	FLAT CABLE	1	
E2		A603M3310GP	PC BOARD B (U)	1	
E3		ANE8337-3280	CUSHION RUBBER B	1	
E4		ANE80028U0AP	ESCUTCHEON B	1	
E5		ANE80068U0AP	ESCUTCHEON D	1	
E6	⚠	A64793650AP	MEMBRANE SWITCH	1	
E7		ANE800L8U0AP	ESCUTCHEON BASE (U)	1	
E8		ANE80018U0AP	ESCUTCHEON A (U)	1	

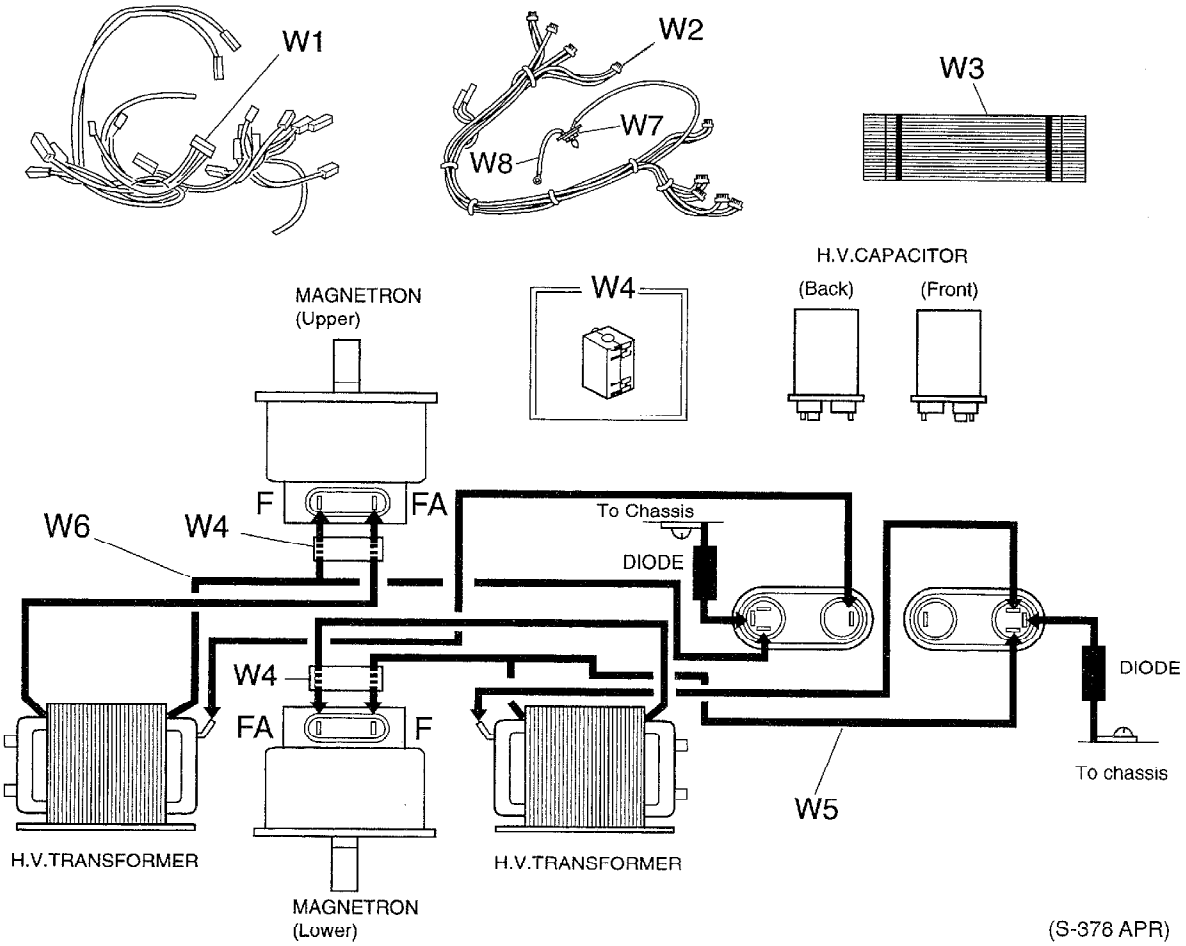
PACKING AND ACCESSORIES



(S-365APH)

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
*P1#		B00033652AP	INSTRUCTION BOOK/ENGLISH	1	
*P1#		B00033651CP	INSTRUCTION BOOK/FRENCH	1	
P2		A01023650AP	PACKING CASE, PAPER	1	
P3		ANE01048U0AP	UPPER FILLER	1	
P4		ANE01058U0AP	LOWER FILLER	1	
*P5		B01065910AG	P.E. BAG	1	
P6		ANE01072Q0AP	DOOR SHEET	1	
*P7		B01083650AP	TRAY PACKING	1	
P8		A01453230AP	DOOR SHEET B	1	
*P9#		B04203651AP	OPERATING GUIDE	1	
*P9#		B04203651CP	OPERATING GUIDE	1	
P10		A1134-3280	FOOT BRACKET	1	

WIRING MATERIALS (ALL MODELS)



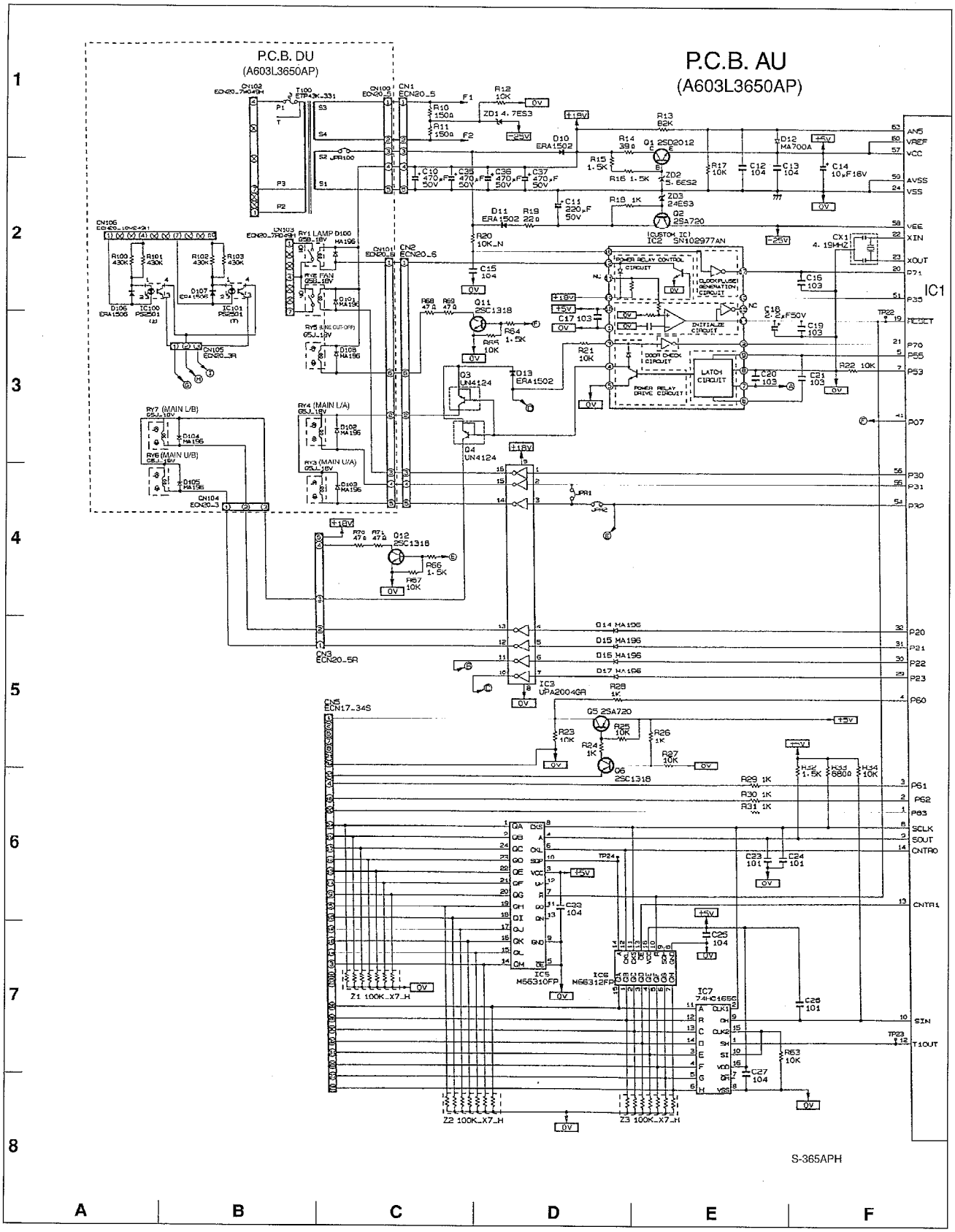
(S-378 APR)

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
*W1		B030A3650AP	LEAD WIRE HARNESS	1	NE-1257A
*W1		B030A3650CP	LEAD WIRE HARNESS	1	NE-1257C
*W1		B030A3660AP	LEAD WIRE HARNESS	1	NE-1757A
*W1		B030A3660CP	LEAD WIRE HARNESS	1	NE-1757C
*W1#		B030A3780AP	LEAD WIRE HARNESS	1	NE-2157A
*W1#		B030A3780CP	LEAD WIRE HARNESS	1	NE-2157C
*W2		B030H3650AP	LEAD WIRE HARNESS C	1	
W3		A6590-3280	FLAT CABLE	1	
W4		A50966520UP	FERRITE COIL	2	NE-1257C, NE-1757C, NE-2157C
*W5		B03513650AP	LEAD WIRE	1	
*W6		B03503650AP	LEAD WIRE	1	
W7		A601L5150AP	SENSOR UNIT	1	
*W8		B03603650AP	LEAD WIRE	1	

Ref.No.		Part No.	Part Name & Description	Pcs/Set	Remarks
REF NO. 83 NOISE FILTER (U) (CANADIAN MODELS ONLY)					
C506		ECQU2A224MNA	POLYESTER CAPACITOR	1	(0.22uf,250V,±20%)
C504,C505		ECKMNA222ME	CAPACITOR	2	(0.022MF,250V,±20%)
CN10		AEEMMD00703W	CONNECTOR	1	3PIN
D504		ERZC10DK621F	VARISTOR	1	
D503		ERZV10D182	VARISTOR	1	
D502		ERZV10D911E1	VARISTOR	1	
F500,F501		A62316010BP	FUSE HOLDER	2	
L500		A621A-1811	FILTER COIL	1	
REF NO. 82 L.V. TRANSFORMER (U) (ALL MODELS)					
		AMQ61148V0AP	POWER RELAY BRACKET	1	
		ANE65448U0AP	SPACER A	7	
		ANE65458U0AP	SPACER B	2	
		B63383650AP	INSULATION SHEET	1	
		XYN3+F25S	SCREW	2	3X25
CN100		AEEMMF01F05W	CONNECTOR	1	5PIN
CN101		AEEMMF03F06W	CONNECTOR	1	6PIN
CN102		AEEMMD04907R	CONNECTOR	1	7PIN
CN104		AEEMMF00703W	CONNECTOR	1	3PIN
CN105		AEEMMF00703R	CONNECTOR	1	3PIN
CN106		AEEMMD24910W	CONNECTOR	1	10PIN
D100, 101, 102, 103, 104, 105, 108		MA196-(TA5)	DIODE, SI	7	50V, 100MA
D106, 107		AEDNERA1506	DIODE, SI	2	
IC100, 101		AEICP25011HL	L.S.I.	2	
R100, 101, 102, 103		ERDS1TJ434T	CARBON FILM RESISTOR	4	(430KΩ,1/2W,±5%)
RY1	⚠	AEBG5B18P-1	POWER RELAY	1	(18V)
RY2	⚠	AEBG5B1E18	POWER RELAY	1	(18V)
RY3,4,5,6,7	⚠	AEG5J1EM18B	POWER RELAY	5	(18V)
T100	⚠	ETP43KZN61DN	L.V. TRANSFORMER	1	

DIGITAL PROGRAMMER CIRCUIT (NE-1257A & C, NE1757A & C)

SCHEMATIC DIAGRAM

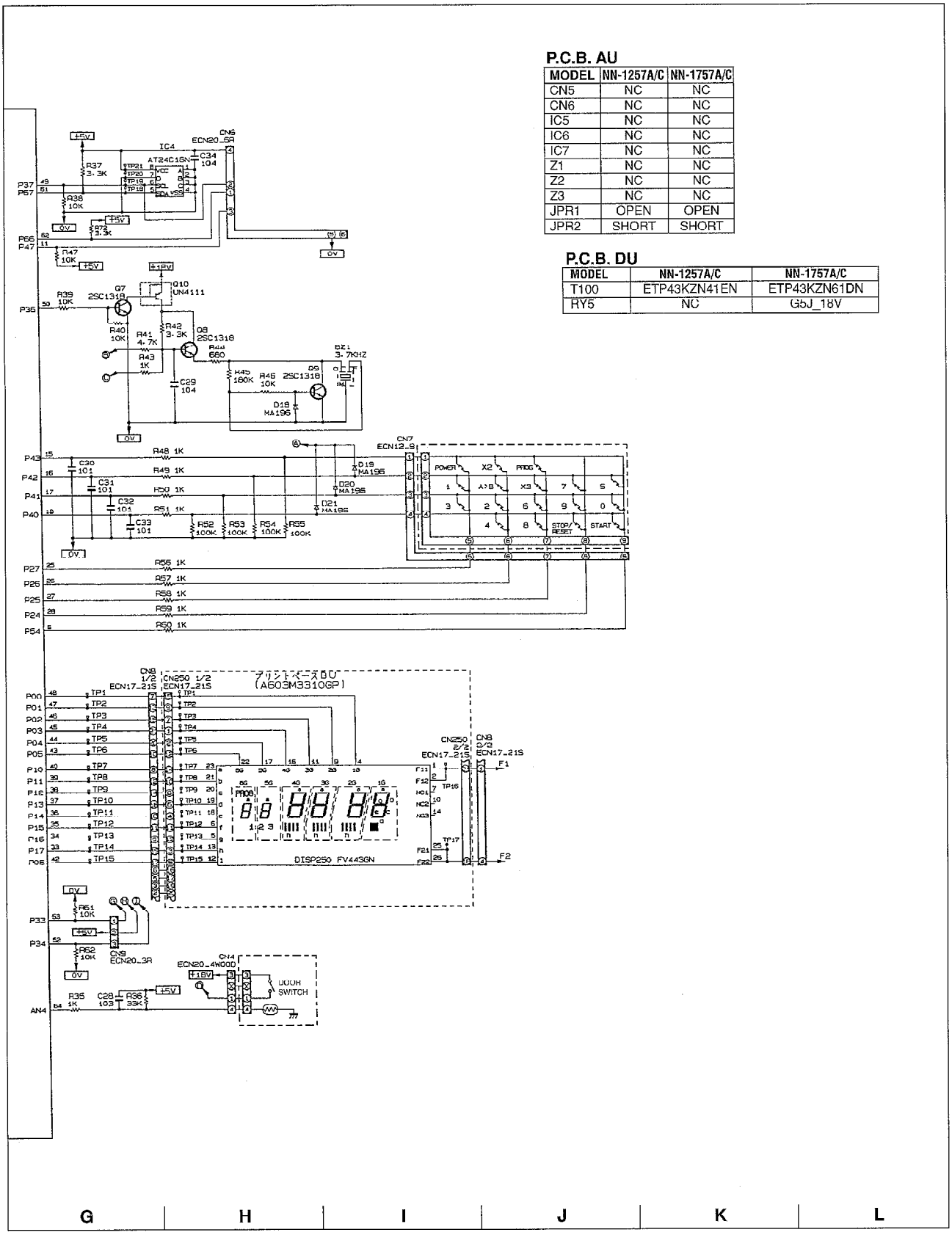


P.C.B. AU

MODEL	NN-1257A/C	NN-1757A/C
CN5	NC	NC
CN6	NC	NC
IC5	NC	NC
IC6	NC	NC
IC7	NC	NC
Z1	NC	NC
Z2	NC	NC
Z3	NC	NC
JPR1	OPEN	OPEN
JPR2	SHORT	SHORT

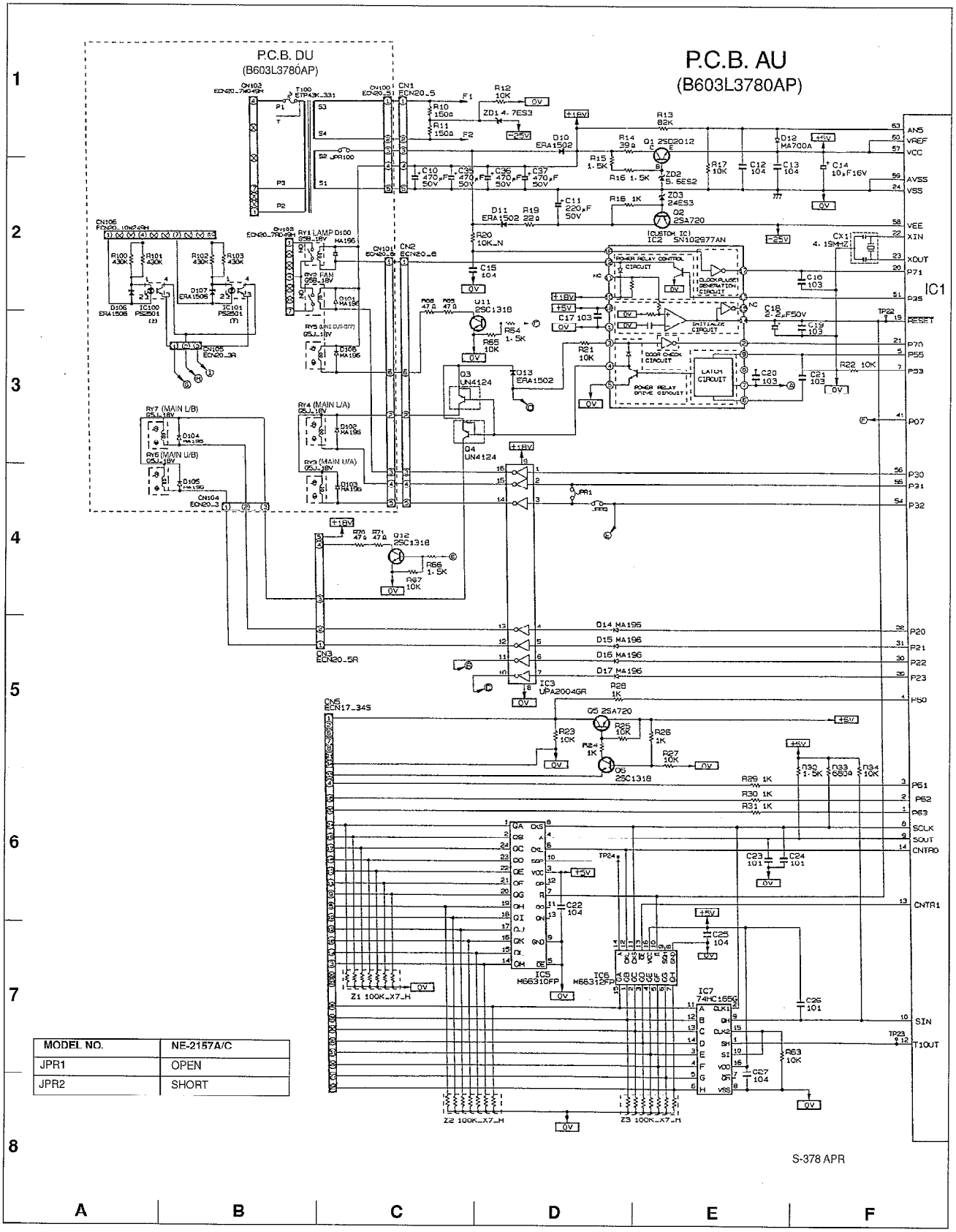
P.C.B. DU

MODEL	NN-1257A/C	NN-1757A/C
T100	ETP43KZN41EN	ETP43KZN61DN
RY5	NC	G5J_18V

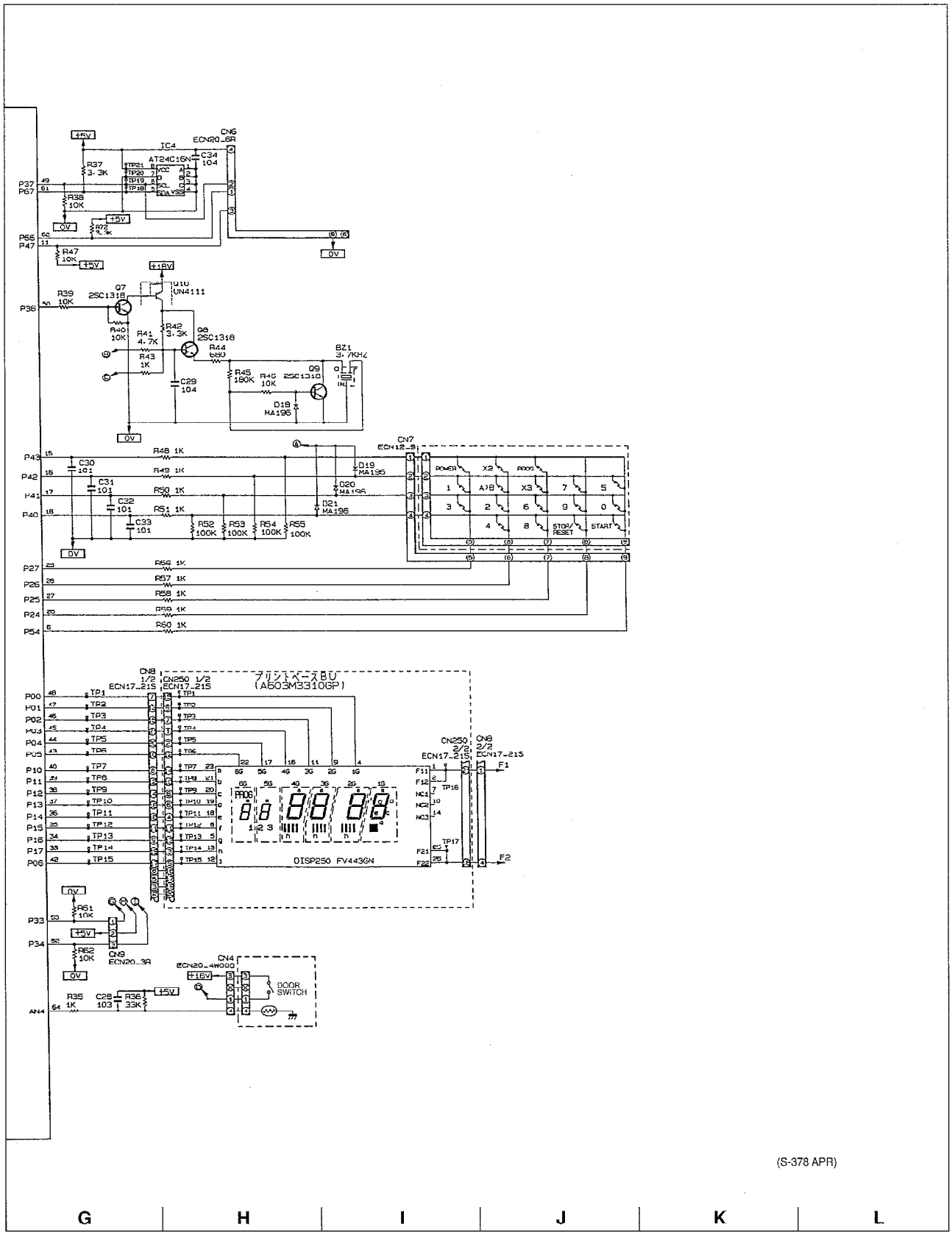


DIGITAL PROGRAMMER CIRCUIT (NE-2157A & C)

SCHEMATIC DIAGRAM



MODEL NO.	NE-2157A/C
JPR1	OPEN
JPR2	SHORT


+5V
IC4
AT24C16N
CN6
ECN20_6R
R37 3.3K
C34 104
R38 10K
R72 4.7K
R47 10K
0V
+16V
Q7 2SC1318
Q10 UN4111
R39 10K
R40 10K
R41 4.7K
R42 3.3K
Q8 2SC1318
R44 680
R43 1K
C29 104
R45 180K
R46 10K
Q9 2SC1318
BZ1 3.7KHz
D18 MA196
CN7
ECN12_8
POWER
X2
AUTO
A/B
X3
STOP/ RESET
START
D19 MA196
D20 MA196
D21 MA196
C30 101
C31 101
C32 101
C33 101
R48 1K
R49 1K
R50 1K
R51 1K
R52 100K
R53 100K
R54 100K
R55 100K
R56 1K
R57 1K
R58 1K
R59 1K
R60 1K
CN8 1/2
ECN17_21S
CN250 1/2
ECN17_21S
プリントベースBU
(A603M3310GP)
CN250 2/2
CN8 2/2
ECN17_21S
DISP250 FV443GN
R61 10K
R62 10K
CN9
ECN20_3R
CN4
ECN20_4W000
DOOR SWITCH
R35 1K
C28 103
R36 33K
P33
P34
AN4

(S-378 APR)

DIGITAL PROGRAMMER CIRCUIT (ALL MODELS)

PARTS LIST

Note: Items marked * are supplied by MMOC (MAC) (U.S.A.) - For information purpose only.
Items marked # are new Part No's. for Pre I.G. (Initial Guidance) list.

REF No.	PART NO.	DESCRIPTION	QTY	REMARKS
BZ1	EFBRL37C20	BUZZER	1	3.7KHz
C10,35,36,37	ECA1HM471B	ELECTROLYTIC CAPACITOR, AL.	4	470MF/50V
C11	ECA1HM221B	ELECTROLYTIC CAPACITOR, AL.	1	220MF/50V
C12,13,15,22,25,27,28,29,34	AECF50F104Z	CERAMIC CAPACITOR	9	0.1MF/50V
C14	ECEA1CKA100B	ELECTROLYTIC CAPACITOR, AL.	1	10MF/16V
C16,17,19,20,21	AECBT50F103Z	CERAMIC CAPACITOR	5	0.01MF/25V
C18	ECEA1HKA2R2B	ELECTROLYTIC CAPACITOR, AL.	1	2.2MF/50V
C23,24,26,30,31,32,33	ECBT1H101KB5	CERAMIC CAPACITOR	7	0.0001MF/50V
CN1	AEEMMF01F05W	CONNECTOR	1	5PIN
CN2	AEEMMF03F06W	CONNECTOR	1	6PIN
CN3	AEEMMF01F05R	CONNECTOR	1	5PIN-RED
CN4	AEEMMF00D04W	CONNECTOR	1	4PIN
CN7	AEEM09FDZRTM	CONNECTOR	1	
CN8	AEEMM5204521	CONNECTOR	1	
CN9	AEEMMF00703R	CONNECTOR	1	3PIN-RED
CX1	EF0GC4194T4	RESONATOR	1	4.19MHz
D10,11,13	AEDNERA1502	DIODE, SI	3	1.0A
D12	MA700-(TA)	DIODE, SI	1	0.03A
D14,15,16,17,18,19,20,21	MA196-(TA5)	DIODE, SI	8	0.1A
IC1#	AEIC38122259	L.S.I.	1	
IC2	AN6752	IC	1	AEIC102977AN
IC3	AEICU2004GR	IC	1	
IC4	AEICAT24C16N	IC	1	
Q1	2SD2012	TRANSISTOR, SI, 2W	1	3MHz,60V,8A
Q2,3	2SA720RTA	TRANSISTOR, SI, 400mW	2	200MHz (NE-2157A/C)
Q4	UN4115-(TA)	TRANSISTOR, SI, 300mW	1	(NE-2157A/C)
Q2,5#	2SA720PRTA	TRANSISTOR, SI, 400mW	2	200MHz (NE-1257A/C, NE-1757A/C)
Q3,4#	UN4124-(TA)	TRANSISTOR, SI, 300mW	2	(NE-1257A/C, NE-1757A/C)
Q6,7,8,9,11,12	2SC1318QSTA	TRANSISTOR, SI, 400mW	6	200MHz
Q10	UN4111-(TA)	TRANSISTOR, SI, 300mW	1	
R10,11	ERDS2TJ151T	CARBON FILM RESISTOR	2	150Ω,1/4W,5%
R12,17,21,22,23,25,27,34,38,39,40, 46,47,61,62,63,65,67	ERDS2TJ103T	CARBON FILM RESISTOR	18	10KΩ,1/4W,5%
R13	ERDS2TJ823T	CARBON FILM RESISTOR	1	82KΩ,1/4W,5%
R14	ERDS2TJ390T	CARBON FILM RESISTOR	1	39Ω,1/4W,5%
R15,16,32,64,66	ERDS2TJ152T	CARBON FILM RESISTOR	5	1.5KΩ,1/4W,5%
R18,24,26,28,29,30,31,35,43,48,49, 50,51,56,57,58,59,60	ERDS2TJ102T	CARBON FILM RESISTOR	18	1.0KΩ,1/4W,5%
R19	ERDS2TJ220T	CARBON FILM RESISTOR	1	22Ω,1/4W,5%
R20	ERDS2FJ103T	CARBON FILM RESISTOR	1	10KΩ,1/4W,5%
R33,44	ERDS2TJ681T	CARBON FILM RESISTOR	2	680Ω,1/4W,5%
R36	ERDS2TJ333T	CARBON FILM RESISTOR	1	33KΩ,1/4W,5%
R37,42,72	ERDS2TJ332T	CARBON FILM RESISTOR	3	3.3KΩ,1/4W,5%
R41	ERDS2TJ472T	CARBON FILM RESISTOR	1	4.7KΩ,1/4W,5%
R45	ERDS2TJ184T	CARBON FILM RESISTOR	1	180KΩ,1/4W,5%
R52,53,54,55	ERDS2TJ104T	CARBON FILM RESISTOR	4	100KΩ,1/4W,5%
R68,69,70,71	ERDS2TJ470T	CARBON FILM RESISTOR	4	47Ω,1/4W,5%
ZD1	AEDZ4R7ES3T1	ZENER DIODE, SI	1	
ZD2	AEDZ5R6ES2T1	ZENER DIODE, SI	1	
ZD3	AEDZ24ES3T1	ZENER DIODE, SI	1	

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